3.7 Land Use and Planning, Communities and Neighborhoods, Property, and Environmental Justice

This section evaluates the potential impacts of the No Project and HST Alignment Alternatives on land use compatibility, communities and neighborhoods, and property.[1] This section also addresses environmental justice in accordance with the provisions of Executive Order (EO) 12898. This evaluation describes how existing conditions compare with the No Project Alternative and how the No Project Alternative compares with the potential impacts of the HST Alignment Alternatives and station location options in the region being studied.

3.7.1 Regulatory Requirements and Methods of Evaluation

A. REGULATORY PROVISIONS

Land Use, Communities and Neighborhoods, and Property

These sections address the potential effects of each of the alignment alternatives on existing and planned land uses. These sections include a discussion of the existing uses in and adjacent to areas where property acquisition may be needed for an alignment alternative, an analysis of the changes to these uses that may occur with an alignment alternative, a discussion of potential inconsistencies with land use plans, and identification of general mitigation strategies. The discussion of potential inconsistencies with planned land uses does not imply that the Authority, a state agency, would be subject to such plans or local ordinances, either directly or through the NEPA or CEQA process. The information is provided to indicate potential land use changes that could result in environmental impacts.

Environmental Justice

EO 12898, known as the federal environmental justice policy, requires federal agencies to address to the greatest extent practicable and permitted by law the disproportionately high adverse human health and environmental effects of their programs, policies, and activities, on minority and low-income populations in the United States. Federal agency responsibilities under this EO also apply to Native American programs. Department of Transportation (DOT) Order 5610.2 on environmental justice defines "disproportionately high and adverse effect on minority and low-income populations" to mean an adverse effect that is predominately borne by a minority population and/or a low-income population or that would be suffered by the minority population and/or low-income population and that is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the nonminority population and/or non-low-income population (Department of Transportation Order 5610.2, Appendix Definitions, sub.[g]).

The California Government Code defines environmental justice as the "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (California Government Code § 65040.12[e]). There are no specific state procedures prescribed for consideration of environmental justice issues related to the proposed HST Alignment Alternatives.

B. METHODS OF EVALUATION OF IMPACTS

The analysis was conducted using U.S. Census 2000 block group information/data compiled in a geographic information systems (GIS) format, local community general plans or regional plans, and land use information provided by the planning agencies in each of the regions. Existing and future conditions were described for the No Project Alternative by documenting existing information for

[1] See Section 3.0, Introduction, for an explanation of how this section fits together with the HST Network Alternatives presented in Chapter 7, as well as for an overview of the information presented in the other chapters.

existing and planned future land use policy near HST Alignment Alternatives and potential station location options, development patterns for employment and population growth, demographics, communities and neighborhoods, housing, and economics. The No Project Alternative was compared to the planned uses reflected in general plans and regional plans to see if it may result in potential effects on future development. The general and regional plans consulted for this section are listed in Chapter 14, "Sources Used in Document Preparation."

The ranking systems described below were used to evaluate potential impacts for the HST Alignment Alternatives for land use changes, land use compatibility, and property. Potential impacts on communities and neighborhoods were also considered. The presence of minority populations and low-income populations in the study area for an alignment alternative was identified to consider potential environmental justice issues. Because this is a programmatic environmental review, the analysis of these potential impacts was performed on a broad scale to permit a comparison of relative differences among the alignment alternatives. Further evaluation of potential impacts would occur at the project-level environmental review.

Land Use Compatibility

Future land use compatibility is based on information from general plans and other regional and local transportation planning documents. These documents were examined to assess an alignment alternative's potential consistency with the goals and objectives defined therein. An alignment alternative is considered highly compatible if it would be located in areas planned for transportation multi-modal centers or corridor development, redevelopment, economic revitalization, transit-oriented development, or high-intensity employment. Compatibility would be considered low if an alignment alternative would be potentially inconsistent with local or regional planning documents. For example, homes and schools are more sensitive to changes that may result in increased noise and vibration (see Section 3.4, "Noise and Vibration") or increased levels of traffic congestion (see Section 3.1, "Traffic, Transit, Circulation, and Parking"). Industrial uses, however, are typically less sensitive to these types of changes because they interfere less with normal industrial activities. Because in this analysis an area's sensitivity or compatibility is based on the presence of residential properties, low, medium, and high levels of potential compatibility are identified based on the percentage of residential area affected, the proximity of the residential area to facilities included in an alignment alternative, and the presence of local or regional uses (such as parks, schools, and employment centers). For highway corridors (under the No Project Alternative) and for proposed alignment alternatives, land use compatibility was assessed using GIS layers (or aerial photographs where available) to identify proximity to housing and population and to determine whether the alignment alternatives would be within or outside an existing right-of-way in the study area. Potential impacts are considered low if existing land uses within a potential alignment, station, or maintenance facility area are found to be compatible with the land use changes that may result from the alignment alternative. The type of improvement that would be associated with the alignment alternative would also affect the level of potential impact. Improvements such as potential widening of an existing right-of-way or the need for new right-of-way were considered to have a low compatibility with agricultural land. Conversely, if the improvement would be contained within the existing right-of-way or within a tunnel, the alignment alternative was considered compatible with agricultural land.

Table 3.7-1 summarizes the potential compatibility rating of existing and planned land use types with the potential HST Alignment Alternatives and station location options. Therefore, where potential compatibility would be rated low, the potential for adverse impacts would be higher, and where potential compatibility would be rated high, the potential for adverse impacts would be lower.

Table 3.7-1
Compatibility of Land Use Types

Low Compatibility	Medium Compatibility	High Compatibility
Single-family residential, neighborhood and community parks, habitat conservation area, elementary/middle school, agricultural (widened or new right-of-way needed)	Multifamily residential, high schools, low-intensity industrial, hospitals	Business park/regional commercial, multifamily residential, existing or planned transit center, high intensity industrial park, service commercial, commercial recreation, college, transportation/utilities, high-intensity government facilities, airport or train station, agricultural (tunnel or no new right-of-way needed)

Communities and Neighborhoods

A potential impact on a community or neighborhood was identified if an alignment alternative would create a new physical barrier, isolating one part of an established community from another and potentially resulting in a physical disruption to community cohesion. Improvements to existing transportation corridors, including grade separations, would not generally result in new barriers.

Property

Assessment of potential property impacts is based on the types of land uses adjacent to the particular proposed alignment alternative, the amount of right-of-way potentially needed due to the construction type, and the land use sensitivity to potential impacts. Impacts include potential acquisition, displacement and relocation of existing uses, or demolition of properties.

In some instances, relatively minor strips of property would be needed for temporary construction easements or permanent right-of-way for the proposed HST Alignment Alternatives. In other instances, development of proposed facilities could result in acquisition, displacement, and/or relocation of existing structures. The types of property impacts that could occur include displacement of a residence or business or division of a farm or other land use in a way that makes it harder to use. Mitigation may also be required to maintain property access. Potential property impacts were ranked high, medium, or low, as summarized below in Table 3.7-2 (see Table 3.7-A-1 in Appendix 3.7-A for more detail).

Table 3.7-2
Rankings of Potential Property Impacts

Facility Requirements	Type of Development						
	Residential			Nonresidential			
	Rural/ Suburban	Suburban/ Urban	Urban	Rural Developed	Suburban Industrial/ Commercial	Urban Business Parks/ Regional Commercial	Rural Undeveloped
No additional right-of-way needed (also applies to tunnel segments for HST Alignment Alternatives)	Low	Low	Low	Low	Low	Low	Low
Widening of existing right-of-way required	Medium	Medium	High	Low	Medium	High	Low
New corridor (new right-of-way required; includes aerial and at-grade arrangements)	High	High	High	Medium	Medium	High	Low to medium

To determine potential property impacts, the land uses within 50 ft (15 m) of either side of the existing corridor or within 50 ft (15 m) of both sides of the centerline for new HST alignments were characterized by type and density of development. Densities of structures, buildings, and other elements of the built environment were generally higher in urbanized areas. *Rural/suburban residential* refers to low-density, single-family homes. *Suburban/urban residential* refers to medium density, multifamily housing, such as townhouses, duplexes, and mobile homes. *Urban residential* refers to high-density multifamily housing, such as apartment buildings. *Rural developed nonresidential* uses typically occur in nonurbanized areas and often include developed agricultural land, such as vineyards and orchards. *Suburban industrial/commercial* refers to medium density nonresidential uses and includes some industrial uses, as well as transportation, utilities, and communication facilities. *Urban business parks/regional commercial* refers to nonresidential uses that occur in urbanized areas and includes such uses as business parks, regional commercial facilities, and other mixed use/built-up uses. *Nonrural undeveloped land* includes cropland, pasture, rangeland, and few structures. The classification of development type was based on land use information provided by the planning agencies in each of the regions.

Environmental Justice

This analysis is based on identifying the presence of minority populations and low-income populations in the study area (0.25 mi [0.40 km] from a potential alignment), and generally in the counties crossed by the alignment alternatives. The assessment was done using U.S. Census 2000 information and alignment information to determine if minority or low-income populations exist within the study areas, and if they do, whether the alignments would be within or adjacent to an existing transportation right-of-way (lower potential for impacts) or a new alignments (higher potential for impacts).

The analysis was used to determine whether:

- At least 50% of the population in the study area may be minority or low income.
- The percentage of minority or low-income population in the study area is at least 10% greater than the average generally in the county or community.

The assessment of potential for impacts on minority and low-income populations considered the size and type of right-of-way needed for the alignment alternatives. For example, if an alignment alternative would be within an existing right-of-way, the potential for adverse impacts would be lower. If the alignment alternative would be on new right-of-way, the potential for adverse impacts may be higher. The potential alignment alternatives, however, have been identified and described to largely use or be adjacent to existing transportation rights-of-way to avoid or reduce potential impacts on natural resources and existing communities to the extent feasible and practicable (see Chapter 2, "Alternatives"). In some cases, the minority and low-income thresholds identified above were met or exceeded, but the geographic area (of the block group) was large and sparsely populated. In these areas, the minority and/or low income populations are distant from the proposed alignment alternative. For these areas, the environmental justice impacts were considered as low, given the distance between the environmental justice populations and the HST line.

Because this is a program-level document, the analysis considers the alternatives on a broad scale. The Statewide Program EIR/EIS concluded that the overall system would not result in a disproportionate impact on minority or low-income populations. Additional analysis would take place during project-level analysis to consider potential localized impacts.

C. CRITERIA FOR DETERMINING CEQA SIGNIFICANCE

Under CEQA, two types of potential impacts are considered in the determination of significance for the land use evaluation; namely, the potential for the project to:

- Physically divide an established community or be incompatible with adjacent land uses in the short or long term.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The evaluation methods described above provide for the review of these types of potential impacts.

3.7.2 Affected Environment

A. STUDY AREA DEFINED

The study area for land use compatibility, communities and neighborhoods, and environmental justice is 0.25 mi (0.40 km) on either side of the centerline of the rail and highway corridors included in the alignment alternatives and the same distance around station location options and other potential HST-related facilities. This is the extent of area where the alignment alternative might result in changes to land use; the type, density, or patterns of development; or socioeconomic conditions. For the property impacts analysis, the study area is narrower—50 ft (15 m) on either side of the alignment centerlines—to better represent the properties most likely to be affected by the improvements in the alignment alternatives. Land uses in the project area are shown in Figure 3.7-1.

The planned land use for all alignment alternatives is generally described by city and county general plans in the area of the alignment alternatives. Several regulatory agencies and special districts also have future development plans that are considered in this analysis for lands the alignment alternatives would cross. Communities have typically recognized and incorporated the existing rail

and highway corridors in their general land use plans, and most communities encourage transit-oriented development and transit facilities to relieve highway congestion and improve mobility.

Other resources, such as U.S. Census 2000 data, California Department of Finance data, aerial photos, and field observations, were used to document existing and future (Year 2030) conditions for demographics, communities, and neighborhoods.

B. DISCUSSION OF RESOURCES BY CORRIDOR

This section briefly discusses the land use–related resources by corridor along HST Alignment Alternatives in the study area and vicinity. The following five land use-related resources are addressed: (1) existing and planned land use, (2) population characteristics, (3) income, (4) neighborhood and community characteristics, and (5) housing.

For this discussion, the source of the land use data was local governments and regional agencies, such as metropolitan planning organizations. The source of demographic information (existing population and projects, ethnicity, and income) was primarily U.S. Census 2000 data and the California Department of Finance.

According to the 2000 U.S. Census, minority persons are defined as being nonwhite persons, including those of Hispanic origin. Low-income populations are defined as having a median household income at or below Department of Health and Human Service poverty guidelines.

San Francisco to San Jose Corridor

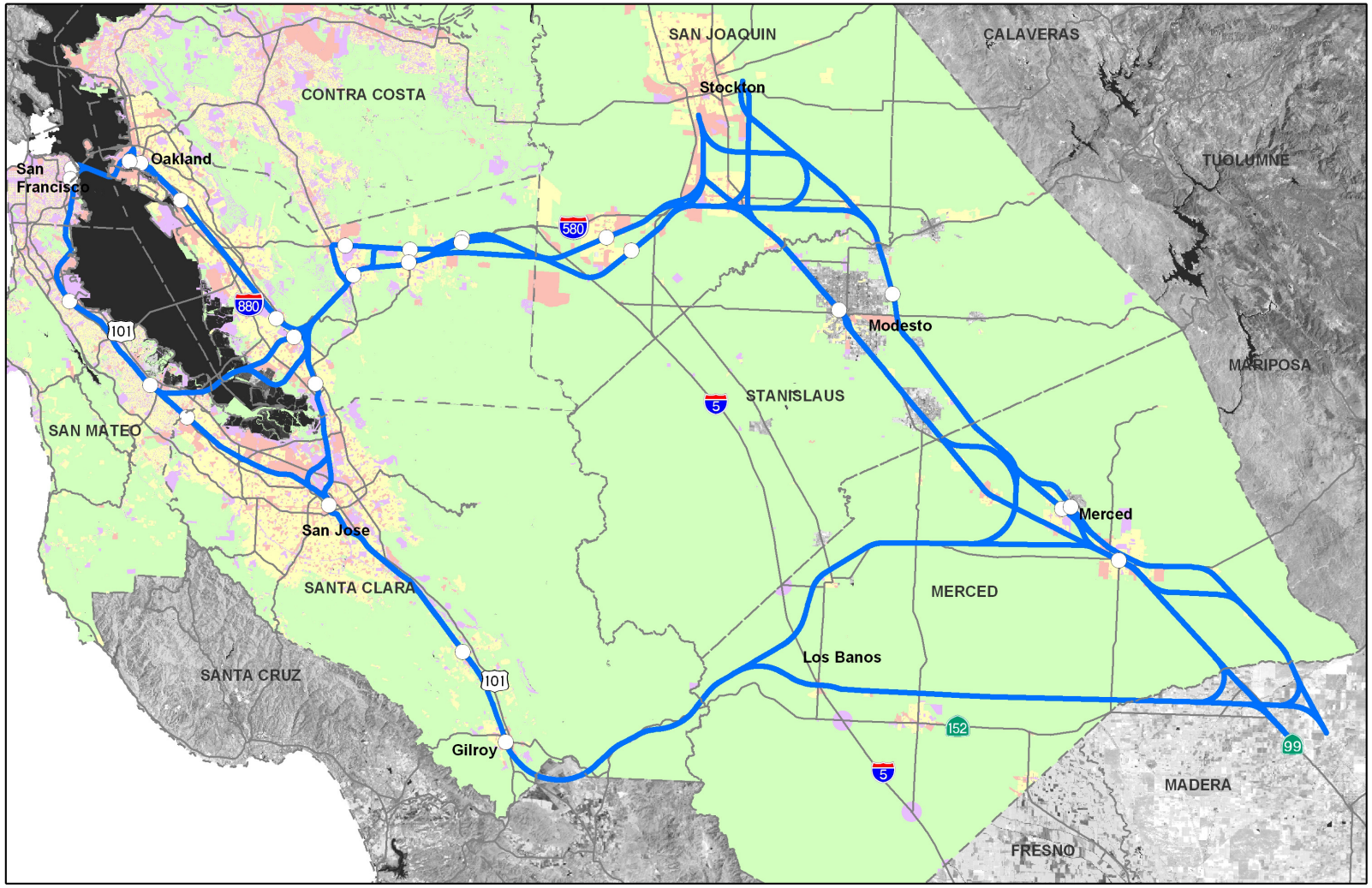
This corridor extends from the areas on the west side of the San Francisco Bay along the Caltrain rail line from the City of San Francisco to the City of San Jose.

Existing Land Use

San Francisco to Dumbarton: The San Francisco to Dumbarton alignment alternative begins at the Transbay Transit Center located in the San Francisco Financial District and continues along the existing Caltrain rail line to Redwood City. The primary land use in the immediate vicinity of this alignment alternative is the rail right-of-way. Land uses in the downtown San Francisco area of the Caltrain rail line are primarily urban, industrial, and transportation uses, with some retail, live/work loft, residential, and commercial uses. In south San Francisco, land uses are primarily light industrial, with some commercial and residential uses, with mostly open space through the Brisbane lagoon area. The San Bruno area presents a mixture of park/open space and very low-density residential housing with some commercial and light industrial uses.

In Millbrae, the area is designated as "unclassified" and contains low-density central business, planned unit development, with some vacant, underutilized, and industrial uses adjacent to the right-of-way. The San Francisco International Airport is located to the east. In the Burlingame portion of the corridor, land uses include commercial, residential, and light industrial. The tracks pass directly adjacent to Burlingame High School and Washington Park. Land uses adjacent to the Caltrain rail line within the City of San Mateo are commercial, office, a central business district, and single- and multifamily residential, including the San Mateo County Exposition Building and fairgrounds and the Hillsdale Shopping Mall. Within the City of Belmont, the primary land uses are transportation and service commercial with some high-density residential areas. Single-family residential, transportation, and commercial uses are within the City of San Carlos. Land uses in Redwood City are predominately research-oriented and industrial, with some residential.

Dumbarton to San Jose: The Dumbarton to San Jose alignment alternative begins in Atherton and continues along the existing Caltrain rail line to the San Jose/Diridon Station. The primary use in the Town of Atherton is low-density single-family residential. The land use in Menlo Park is general



Source: Various Cities, Counties, and Planning Organizations

March 29, 2007

California High-Speed Train Program EIR/EIS

10 5 0 10 20 30 Miles

10 5 0 10 20 30 Kilometers

Legend

- Residential
- Commercial/Industrial
- Other Urban Built-Up
- Agricultural/Open Space
- High-Speed Train Alignment Alternative and Station Location Options
- County Boundaries

FLYCALIFORNIA Without ever leaving the ground.

U.S. Department of Transportation
Federal Railroad Administration

Figure 3.7-1
Existing Land Use
Bay Area to Merced, and Sacramento

commercial and varying types of residential uses, from medium density apartment to single family suburban. Land uses along the alignment alternative in Palo Alto are primarily single-family residential on the east and commercial/services on the west where the station is located. Palo Alto High School is adjacent to the rail line just south of the Palo Alto Station, beyond which is Stanford University. The City of Mountain View has various land uses adjacent to the rail line, including general industrial, residential, public facility, limited industrial, and arterial commercial. Rengstorff Park is located adjacent to the railroad right-of-way. The northern section of the corridor within the City of Sunnyvale is primarily industrial, high-density residential, general business, and neighborhood shopping, with industrial with low- to medium-density residential uses interspersed to the north. Through the City of Santa Clara, the adjacent uses consist of mixed use, moderate-density residential, office/research and development, and medium density residential.

Population Characteristics

The San Francisco to San Jose corridor crosses three counties: San Francisco, San Mateo, and Santa Clara. Population in this area grew from 2.9 million people in 1990 to 3.2 million in 2000, an increase of 10%. By 2030, the area population is expected to reach 4.0 million, an increase of 28% over 2000 levels. Santa Clara County is expected to have the highest expected growth in this area, with 35% over the same time period.

According to U.S. Census 2000 data, minority persons accounted for the following percentages of the total population in the counties in the area (lowest to highest): San Mateo, 50%; Santa Clara, 56%; and San Francisco, 56%. Approximately 52% of the population along the San Francisco to San Jose corridor is part of an ethnic minority group.

Income

According to U.S. Census 2000, the percentages per county of households identified as below federal poverty level (as defined by the Department of Health and Human Services) along the San Francisco to San Jose corridor are (lowest to highest) San Mateo, 5%; Santa Clara, 6%; and San Francisco, 10%. The study area for the San Francisco to San Jose corridor has a low-income population of approximately 7%.

Neighborhood and Community Characteristics

San Francisco to Dumbarton: The San Francisco to Dumbarton alignment alternative begins in downtown San Francisco and continues within the existing Caltrain right-of-way to Redwood City. In San Francisco, the alignment alternative passes through the Potrero, Bay View, and Bayshore districts and south into a single-family residential neighborhood in Brisbane. As it continues into south San Francisco, it passes through less dense residential neighborhoods in Tanforan and Lomita Park and along the eastern edge of Millbrae. Multifamily and single-family neighborhoods are denser where the corridor passes through Burlingame and the Hayward Park section of San Mateo. The corridor continues through the cities of Belmont and San Carlos, south into Redwood City.

Dumbarton to San Jose: The Dumbarton to San Jose alignment alternative begins in Atherton and continues to San Jose within the existing Caltrain right-of-way. The alignment alternative passes through the suburban communities of Atherton and Menlo Park until reaching Palo Alto and Stanford University. The alignment alternative then passes southeast through the City of Mountain View, the City of Sunnyvale, and the suburban neighborhoods of Lawrence and Santa Clara and the Downtown and Willow Glen neighborhoods of the City of San Jose. It terminates in the dense City of San Jose.

Oakland to San Jose Corridor

This corridor extends from the areas on the east side of the San Francisco Bay along I-880 from the City of Oakland to the City of San Jose.

Existing Land Use

West Oakland to Niles Junction: The West Oakland to Niles Junction alignment alternative begins just north of the West Oakland BART Station near a residential area with adjacent commercial uses. Land use to the southeast and southwest is primarily transportation related, including the UPRR yard and the Joint Intermodal Rail Terminal.

Between 18th and 66th Avenues, the predominant uses are industrial and commercial complexes on both sides of the UPRR tracks. Land uses west of the Coliseum Station are predominately commercial and service oriented, including the McAfee Coliseum and ORACLE Arena. Industrial and commercial complexes and residential uses are located to the east. Land uses are initially residential and then primarily industrial between the Oakland Airport/Coliseum BART Station and 98th Avenue. Adjacent land uses in the cities of San Lorenzo and Hayward are primarily single-family residential with some commercial/service oriented uses. Existing land uses in the vicinity of the Union City BART Station include residential to the east and industrial and commercial complexes to the west.

12th Street/City Center to Niles Junction: Within the 12th Street/City Center to Niles Junction alignment alternative, land uses in the vicinity of the 12th Street/City Center station location option are primarily related to the Downtown Civic Center and other commercial and service oriented uses. The alignment alternative would proceed in a tunnel under 12th Street from Downtown Oakland past Lake Merritt to 18th Avenue.

South of 18th Avenue in Oakland, the 12th Street/City Center to Niles Junction alignment alternative follows the same alignment as the West Oakland to Niles Junction alignment alternative.

Niles Junction to San Jose via Trimble: The Niles Junction to San Jose via Trimble alignment alternative begins at Niles Junction in Fremont and continues south to the east of Fremont Central Park and Lake Elizabeth, commercial and service oriented uses, and the Alameda Flood Control Channel. Near Washington Boulevard, single-family residential uses are predominant on the west and mixed urban uses on the east. Adjacent land uses are almost exclusively industrial on both sides of the UPRR tracks between Mission Boulevard and Auto Mall Parkway with some commercial complexes in Fremont. Between SR 237 and the Alameda County Line, residential and industrial uses are located to the east including the Elmwood Rehabilitation Center and County Jail Farm. Industrial and commercial complexes including service uses are located to the west.

Along Trimble Road, between I-880 and Highway 101, industrial land uses are predominant. South of Highway 101, north of the existing Caltrain alignment, land uses are industrial to the west, and the Norman Y. Mineta San Jose International Airport is to the east. This alignment alternative would continue to the San Jose (Diridon) station location option through commercial and industrial land uses.

Niles Junction to San Jose via I-880: Between Niles Junction and Trimble Road, the Niles Junction to San Jose via I-880 alignment alternative would be the same as the Niles Junction to San Jose via Trimble alignment alternative. South of Trimble Road, residential areas are located in the northeast and southeast quadrants of the I-880/Montague Expressway interchange. Between Highway 101 and the Montague Expressway, adjacent land uses are primarily industrial and commercial complexes. This alignment alternative would continue to the San Jose (Diridon) station location option through commercial and industrial land uses.

Population Characteristics

The Oakland to San Jose corridor includes Alameda and Santa Clara counties. Population for this area grew from 2.8 million people in 1990 to 3.1 million in 2000, an increase of nearly 13%, and is expected to reach 4.2 million by 2030, increasing by 33% over 2000 levels. Over the same time period, population in Santa Clara County is expected to grow by over 35%, the highest growth in this region.

Minority persons in this corridor account for 59% of the population in Alameda County and 56% in Santa Clara County, according to 2000 U.S. Census data. The study area for this corridor has an ethnic minority population of 73%.

Income

According to 2000 U.S. Census data, nearly 10% of Alameda County households and 6% of households in Santa Clara County were below the poverty threshold (as defined by the Department of Health and Human Services) in 1999. According to U.S. Census 2000, low-income households within the Oakland to San Jose corridor study area represent nearly 14%.

Neighborhood and Community Characteristics

West Oakland to Niles Junction: This alignment alternative begins in the City of Oakland and travels its entire length along either existing rail or roadway right-of-way or via tunnel. The West Oakland to Niles Junction alignment alternative travels south through single-family residential neighborhoods in west Oakland, San Leandro, San Lorenzo, and west of Ashland, continuing through the multifamily residential neighborhoods of Cherryland and Hayward. The alignment continues through the residential neighborhoods of Union City, Pabrico, and Eberly.

12th Street/City Center to Niles Junction: The 12th Street/City Center to Niles Junction alignment alternative would be the same as the West Oakland to Niles Junction alignment alternative except that the alignment alternative would begin in Downtown Oakland.

Niles Junction to San Jose via Trimble: Within the Niles Junction to San Jose via Trimble alignment alternative, neighborhoods become denser as it enters Fremont and travels next to Lake Elizabeth. Just north of Milpitas, the alignment alternative traverses the Warm Springs District, through the City of Milpitas to its terminus in San Jose via Trimble Road.

Niles Junction to San Jose via I-880: The Niles Junction to San Jose via I-880 alignment alternative would be the same as the Niles Junction to San Jose via Trimble alignment alternative except that south of Trimble Road, the alignment alternative would travel through single-family neighborhoods in San Jose.

San Jose to Central Valley

This corridor includes the areas from the City of San Jose south to the City of Gilroy and east across the Diablo Range to the Central Valley. Three alignments are in this corridor: Pacheco, Henry Miller (UPRR), Henry Miller (BNSF), and GEA North.

Existing Land Use

Pacheco: The Pacheco alignment alternative begins at the Diridon Station in San Jose following an existing rail corridor past commercial, transportation, and single-family and multifamily residential uses. The alignment alternative continues through commercial, light industrial, and single-family residential uses as it parallels SR 87. The land uses become more industrial as the alignment alternative crosses the Almaden Expressway and Curtner Avenue. South of Coyote, rangeland and agricultural uses prevail with scattered single-family residential uses. The City of Gilroy is denser with single-family residential, commercial, and light industrial uses; however, as the alignment crosses Highway 101 to the east, land uses become agricultural again. When the alignment crosses over

Bloomfield Avenue, it no longer follows the existing rail corridor as it proceeds through agricultural land and the Diablo Mountain Range, continuing north of Pacheco State Park, Cottonwood Creek Wildlife Area, O'Neill Forebay Wildlife Area, and the San Luis Reservoir.

Henry Miller (UPRR Connection): The Henry Miller (UPRR Connection) alignment alternative would be the same as the Henry Miller (BNSF Connection) alignment alternative except that the UPRR connections would be west of Chowchilla and would only run through agricultural land.

Henry Miller (BNSF Connection): The Henry Miller (BNSF Connection) alignment alternative parallels Henry Miller Avenue beginning near the O'Neill Forebay Wildlife Area in Santa Nella just east of I-5. The alignment alternative is in a predominantly agricultural area and runs south of the Volta Wildlife Area. After crossing SR 165, the alignment crosses the southern tip of the Los Banos Wildlife Area before continuing across the San Joaquin Fresno River and SR 59 parallel to Jefferson Road/Avenue 24. The alignment alternative runs just south of Chowchilla where the agricultural uses become denser. The Henry Miller (BNSF) alignment alternative continues southeast from Chowchilla north of the Valley State Prison for Women until it merges with Santa Fe Drive. The Henry Miller (BNSF) alignment alternative continues northeast from Chowchilla, further north of the Valley State Prison for Women where it also merges with Santa Fe Drive northeast of the Brenda Reservoir.

GEA North: The GEA North alignment alternative begins at the San Luis Reservoir near Cottonwood Creek and continues through agricultural land, crossing I-5 north of Gustine. The alignment alternative continues through the northern portion of the San Luis National Wildlife Refuge and through agricultural land between Atwater and Merced. The GEA Atwater Wye South to Merced UP segment crosses SR 99 and runs east of Atwater, crossing agricultural land uses. The GEA Atwater Wye North to BNSF segment crosses SR 99 further north of the GEA Atwater Wye South to Merced UP segment west of Atwater through agricultural uses. The GEA Atwater Wye North to BNSF segment also merges with Santa Fe Drive.

The primary land use in proximity to the San Jose/Diridon station location option is industrial. Other nearby land uses within the City of San Jose include combined industrial/commercial, public park, medium-low density and medium-density residential, light industrial, private recreation, agriculture, and campus industrial. The HP Pavilion at San Jose is located adjacent to the Caltrain alignment just north of the San Jose/Diridon station location option.

Population Characteristics

The San Jose to Central Valley corridor includes four counties: Santa Clara, San Benito, Merced, and Madera. Between 1990 and 2000, this area's population increased by 15% from 1.8 million people to 2.1 million. Population in these counties is expected to grow approximately 44% by 2030, reaching over 3.0 million people. Madera and Merced Counties are expected to have the greatest population increases with an expected growth of 79 and 93%, respectively.

According to the 2000 U.S. Census, minority persons accounted for the following percentages of total population in the counties in the area (lowest to highest): Merced, 56%; Santa Clara, 59%; Madera, 62%; and San Benito, 65%. The ethnic minority population in this area for the San Jose to Central Valley corridor is 61%. The Pacheco and GEA North alignment alternatives have similar ethnic minority populations. The Henry Miller alignment alternatives have a minority population of 73%.

Income

According to 2000 U.S. Census data, the percentages per county of households identified as below federal poverty level (as defined by the Department of Health and Human Services) for this corridor are (lowest to highest): Santa Clara, 6%; San Benito, 8%; Madera, 16%; and Merced, 18%. Low-income households within this corridor represent approximately 11%, according to U.S. Census 2000. The Henry Miller alignment alternatives and the GEA North alignment alternative have the highest

percentage of low-income households with 17 and 16%, respectively. The Pacheco alignment alternative has a low-income percentage of approximately 8%.

Neighborhood and Community Characteristics

Pacheco: The Pacheco alignment alternative begins at the Diridon Station in San Jose following an existing rail corridor through dense residential areas in central and southern San Jose. It proceeds along the existing rail corridor through Coyote, a small community consisting of single-family residences and some commercial/service and industrial land uses. The alignment alternative continues to follow the existing rail corridor through the suburban communities of Morgan Hill and Gilroy and the agricultural community of Old Gilroy. West of the small agricultural town of San Felipe, the alignment alternative departs from the existing rail corridor and passes through the northern portion of San Felipe. The alignment then traverses the Diablo Mountain Range, and meets the GEA North and Henry Miller alignment alternative just west of Santa Nella Village.

Henry Miller (UPRR Connection): The Henry Miller (UPRR Connection) alignment alternative would be the same as the Henry Miller (BNSF Connection) alignment alternative except that the connections with the UPRR are east of Chowchilla.

Henry Miller (BNSF Connection): The Henry Miller (BNSF Connection) alignment alternative begins just east of the community of Santa Nella. This alignment alternative is adjacent to an existing transportation right-of-way and passes through agricultural communities northwest of Los Banos and through southern Chowchilla.

GEA North: The GEA North alignment alternative begins just east of Santa Nella and continues northeast until passing just north of Gustine. Northwest of Gustine, the alignment alternative crosses one farm but does not traverse the community itself. After crossing miles of agricultural land, this alignment alternative reaches the town of Atwater. Although this alignment alternative follows existing roadways, it passes through agricultural uses in the southwestern portion of Atwater (GEA North XS). The GEA North XN alignment alternative travels through agricultural uses in central Atwater.

East Bay to Central Valley Corridor

This corridor includes the areas from the City of Fremont east through Niles Canyon and into the cities of Pleasanton, Dublin, and Livermore. East of the City of Livermore, the alignment alternatives in this corridor continue through the Altamont Pass and into the Central Valley via the cities of Tracy and Manteca.

Existing Land Use

There are eight alignment alternatives within the East Bay to Central Valley Corridor: I-680/580/UPRR, I-580/UPRR, Patterson Pass/UPRR, UPRR, Tracy Downtown (BNSF and UPRR Connections), Tracy ACE Station (BNSF and UPRR Connections).

I-680/580/UPRR: The I-680/580/UPRR alignment alternative splits from the existing UPRR alignment in south Pleasanton as it exits the Diablo Mountain Range. As the alignment alternative exits the tunnel, it crosses through the Castlewood Country Club and merges with I-680, where it continues north through single-family residential areas. As I-680 meets I-580, the alignment alternative continues along eastbound I-580 through Dublin. This area is predominantly commercial and industrial with scattered vacant land and single-family residential uses. East of Tassajara Road, land uses are generally vacant or recreational, with some industrial and transportation uses. As the alignment alternative continues east into Livermore, single-family residential uses are predominant with some vacant land on the northern side. As the alignment alternative approaches North Vasco Road, industrial buildings are the dominant land use with single-family residences on the north side

of the alignment. The alignment alternative passes through the Altamont Pass via cut and tunnel, where it merges with the existing UPRR alignment before exiting on the eastern side.

I-580/UPRR: The I-580/UPRR alignment alternative continues from the Dumbarton alignment alternative at its intersection with the Niles/I-880 alignment alternative. The alignment alternative continues northwest from the Dumbarton alignment alternative, via cut and tunnel, through the Diablo Mountain Range. West of I-680, the alignment alternative connects with the existing UPRR and continues east through industrial and residential land uses. East of Pleasanton, the alignment alternative splits from the existing UPRR alignment and continues north to I-580, east of Tassajara Road, passing through mostly vacant land with some industrial uses. Continuing east along I-580, land uses are generally vacant or recreational, with some industrial, residential, and transportation uses. East of Livermore, the alignment alternative passes through the Altamont Pass via cut and tunnel, where it merges with the existing UPRR alignment before exiting on the eastern side to the county line.

Patterson Pass/UPRR: The Patterson Pass/UPRR alignment alternative continues from the Dumbarton alignment alternative at its intersection with the Niles/I-880 alignment alternative. The alignment alternative continues northwest from the Dumbarton alignment alternative, via cut and tunnel, through the Diablo Mountain Range. As it exits the tunnel and traverses west of I-680, the alignment alternative connects with the existing UPRR right-of-way and continues east through industrial and residential land uses in Pleasanton and Livermore. The alignment alternative departs from the existing UPRR alignment in east Livermore where it is flanked by both light industrial and single-family residential uses. The alignment alternative proceeds via a cut through the Altamont Pass where it merges with the UPRR alignment on the eastern side.

UPRR: The UPRR alignment alternative continues from the Dumbarton alignment alternative at its intersection with the Niles/I-880 alignment alternative. The alignment alternative continues northwest from the Dumbarton alignment alternative, via cut and tunnel, through the Diablo Mountain Range. As it exits the tunnel and traverses west of I-680, the alignment alternative connects with the existing UPRR alignment and continues east through industrial and residential land uses in Pleasanton and Livermore. East of Livermore, the alignment alternative passes through the Altamont Pass via cut and tunnel, where it merges with the existing UPRR alignment before exiting on the eastern side into open space land uses to the county line.

Tracy Downtown (BNSF Connection): The Tracy Downtown (BNSF Connection) alignment alternative begins at the western San Joaquin county border, continuing from the I-580/UPRR and UPRR alignment alternatives. The alignment alternative crosses I-580, the Edward G. Brown Aqueduct, and the Delta Mendota Canal, continuing east through the City of Tracy past single-family residences and scattered community parks. On the eastern edge of Tracy, land uses become agricultural and rural residential. After the alignment alternative crosses I-205, it continues through agricultural land west of Escalon.

Tracy ACE Station (BNSF Connection): The Tracy ACE Station (BNSF Connection) alignment alternative begins at the western San Joaquin county border, continuing from the I-580/UPRR and UPRR alignment alternatives. After crossing I-580, the alignment alternative continues just south of Tracy Municipal Airport and continues north through vacant, agricultural, and single-family land uses. At Ahern Road, land uses become predominantly agricultural with some open space and recreational uses east of I-5. As the alignment alternative continues through the City of Manteca, single-family residences with scattered community parks dominate the landscape. Once the alignment alternative crosses SR 120, it would continue through agricultural land west of Escalon.

Tracy ACE Station (UPRR Connection): The Tracy ACE Station (UPRR Connection) alignment alternative would be the same as the Tracy ACE Station (BNSF Connection) except that the alignment alternative would continue through agricultural land uses south of Manteca.

Tracy Downtown (UPRR Connection): The Tracy Downtown (UPRR Connection) alignment alternative would be the same as the Tracy Downtown (BNSF Connection) except that the alignment alternative would continue through agricultural land uses south of Manteca.

Population Characteristics

The East Bay to Central Valley corridor includes Alameda and Stanislaus counties. Population in this area grew from 1.6 million people in 1990 to 1.9 million in 2000, an increase of nearly 15%. By 2030, population in the corridor is expected to grow 39% from 2000, reaching 2.6 million people. Stanislaus County is expecting the highest percentage of growth during the same period with an increase of nearly 65%.

Minority persons in this area accounted for 56% of the population in Alameda County and 69% of the population in Stanislaus County, according to 2000 U.S. Census data. Ethnic minority persons accounted for the following percentages of the total population for each of the alignment segments (lowest to highest): Patterson Pass/UPRR, 23%; I-680/580/UPRR, 30%; Pleasanton, 30%; UPRR, 35%; and I-580/UPRR, 41%.

Income

According to 2000 U.S. Census data, nearly 10% of Alameda County households and 14% of households in Stanislaus County were below the poverty threshold in 1999 as defined by the Department of Health and Human Services.

Neighborhoods and Communities

I-680/580/UPRR: The I-680/580/UPRR alignment alternative splits from the existing UPRR alignment in south Pleasanton as it exits the Diablo Mountain Range, crossing through the Castlewood Country Club and merging with I-680. As it parallels I-680 along the western edge of Pleasanton, it continues north through a single-family residential area. At the interchange of I-680 and I-580, the alignment alternative continues on eastbound I-580 through Dublin. This area is predominantly commercial and industrial interspersed with single-family residential uses. Single-family residential neighborhoods are predominant along the southern side of the alignment alternative as it continues east into the City of Livermore.

I-580/UPRR: West of I-680, south of Pleasanton, the I-580/UPRR alignment alternative connects with existing UPRR right-of-way and continues through single-family neighborhoods. The alignment alternative splits from the existing UPRR right-of-way east of Pleasanton and continues north through unincorporated Alameda County to connect with I-580. Along I-580 and traversing east, single-family residential neighborhoods are predominant along the southern side of the alignment alternative as it continues east into the City of Livermore. Beyond Livermore, the alignment alternative does not pass through any communities or neighborhoods.

Patterson Pass/UPRR: The Patterson Pass/UPRR alignment alternative begins in east Livermore where it follows existing UPRR right-of-way before splitting from the existing UPRR alignment in unincorporated Alameda County. This alignment alternative does not pass through any communities or neighborhoods.

UPRR: As the UPRR alignment alternative exits the tunnel through the Diablo Mountain Range, it continues east through Pleasanton and Livermore on existing rail right-of-way through various neighborhoods.

Tracy Downtown (BNSF Connection): The Tracy Downtown (BNSF Connection) alignment alternative exits the Altamont Pass south of Tracy Municipal Airport, reconnecting with existing UPRR right-of-way along the edge of a single-family residential neighborhood. In southern Manteca, the Tracy Downtown (BNSF Connection) alignment alternative continues along SR 120 through a residential community.

Tracy ACE Station (BNSF Connection): The Tracy ACE Station (BNSF Connection) alignment alternative comes into San Joaquin County and continues into Tracy north of Tracy Municipal Airport along existing freight and commuter rail right-of-way. Near the airport, the alignment alternative passes through a single-family neighborhood to the north. In southern Manteca, the Tracy ACE Station (BNSF Connection) alignment alternative continues along SR 120 through a residential community.

Tracy ACE Station (UPRR Connection): The Tracy ACE Station (UPRR Connection) alignment alternative would be the same as the Tracy ACE Station (BNSF Connection) alignment alternative except that it would not pass through any communities or neighborhoods.

Tracy Downtown (UPRR Connection): The Tracy Downtown (UPRR Connection) alignment alternative would be the same as the Tracy Downtown (BNSF Connection) alignment alternative except that it does not pass through any communities or neighborhoods.

San Francisco Bay Crossings

These crossing alignment alternatives include the San Francisco Bay crossings between the cities of San Francisco and Oakland near the San Francisco/Oakland Bay Bridge and between the cities of East Palo Alto and Newark south of the Dumbarton Bridge and into the City of Fremont.

Existing Land Use

There are three alignment alternatives that make up the San Francisco Bay Crossings corridor: Transbay, Dumbarton, and Fremont Central Park.

Trans Bay Crossing – Transbay Transit Center: The Trans Bay Crossing – Transbay Transit Center alignment begins at 7th and Townsend Street in San Francisco where it passes through industrial, commercial, and recreational land uses and crosses the San Francisco Bay in a tunnel. On the eastern side of the bay, the alignment alternative continues to the City of Alameda and through Oakland Inner Harbor and east across I-880 where it merges with the Oakland to San Jose alignment alternative.

Trans Bay Crossing – 4th & King: The existing land uses are the same for the Trans Bay Crossing – 4th & King alignment alternative as for the Trans Bay Crossing – Transit Center alignment alternative.

Dumbarton (High Bridge): The Dumbarton (High Bridge) alignment alternative begins just south of Redwood City near Middlefield Road. Land uses in this area are predominantly single-family and multifamily residential, with a mixture of commercial and industrial uses. Industrial uses are generally located adjacent to San Francisco Bay and on the east side of Highway 101, but are most predominant on both sides of the Dumbarton Bridge. The Dumbarton alignment alternative would follow the existing Dumbarton Rail Bridge corridor to the east side of the bay where it crosses over Newark Slough. Proceeding south, the alignment alternative crosses through salt ponds in Newark and continues east crossing ACE/Amtrak in a highly industrial area. The alignment alternative crosses I-880 near single-family residences and institutional uses. The alignment alternative then proceeds via tunnel through the Diablo Mountain Range and merges with the existing UPRR alignment.

Dumbarton (Low Bridge): Existing land uses along the Dumbarton (Low Bridge) alignment alternative are the same as the Dumbarton (High Bridge) alignment alternative.

Dumbarton (Tube): Existing land uses along the Dumbarton (Tube) alignment alternative are the same as the Dumbarton (High Bridge) alignment alternative except that the alignment alternative would cross under the Bay in a tube.

Fremont Central Park (High Bridge): The Fremont Central Park (High Bridge) alignment alternative splits from the Dumbarton alignment alternative just west of Newark. The alignment alternative crosses I-880 south of Stevenson Boulevard before intersecting single-family residential neighborhoods and Blacow Park. East of Blacow Park, the alignment alternative proceeds to the east of Fremont Central Park. The alignment alternative connects with the existing UPRR alignment west of the Diablo Mountain Range.

Fremont Central Park (Low Bridge): Existing land uses along the Fremont Central Park (Low Bridge) alignment alternative are the same as the Fremont Central Park (High Bridge) alignment alternative.

Fremont Central Park (Tube): Existing land uses along the Fremont Central Park (Tube) alignment alternative are the same as the Fremont Central Park (High Bridge) alignment alternative except that the alignment alternative would cross under the Bay in a tube.

Population Characteristics

The San Francisco Bay Crossing alignment alternatives include San Francisco, San Mateo, and Alameda counties. Between 1990 and 2000, this area's population increased by over 10% from 2.7 million to over 2.9 million. In this area from 2000 to 2030, the population is expected to grow to 3.7 million people, an increase of 25%. Alameda County expects the most growth during the same time period, with an estimated growth of 31%.

According to 2000 U.S. Census data, minority persons accounted for the following percentages of total population in the counties for the bay crossings (lowest to highest): San Mateo, 41%; San Francisco, 50%; and Alameda County, 51%. Ethnic minority populations within the areas along the San Francisco Bay Crossing alignment alternatives accounted for the following percentages of total population within the alignment alternatives (lowest to highest): Fremont Central Park, 58%; Trans Bay Crossing, 64%; and Dumbarton, 69%.

Income

According to 2000 U.S. Census data, nearly 10% of the households in Alameda and San Francisco counties were below the poverty threshold in 1999 as defined by the Department of Health and Human Services. San Mateo County households below the poverty threshold accounted for nearly 5% of the population.

Neighborhoods and Communities

Trans Bay Crossing – Transbay Transit Center: The Trans Bay Crossing – Transbay Transit Center alignment alternative begins in San Francisco on existing right-of-way and terminates in Oakland. No neighborhoods or communities are traversed.

Trans Bay Crossing – 4th & King: The Trans Bay Crossing – 4th & King alignment alternative begins in San Francisco on existing right-of-way and terminates in Oakland. No neighborhoods or communities are traversed.

Dumbarton (High Bridge): The Dumbarton (High Bridge) alignment alternative begins just south of Redwood City on existing right-of-way, passing through single-family and multifamily residential neighborhoods interspersed with commercial and industrial uses. After crossing San Francisco Bay

south of the Dumbarton Bridge, it passes through single-family and multifamily residential neighborhoods in the cities of Newark and Fremont.

Dumbarton (Low Bridge): The Dumbarton (Low Bridge) alignment alternative would pass through the same neighborhoods and communities as the Dumbarton (High Bridge) alignment alternative.

Dumbarton (Tube): The Dumbarton (Tube) alignment alternative would pass through the same neighborhoods and communities as the Dumbarton (High Bridge) alignment alternative.

Fremont Central Park (High Bridge): The Fremont Central Park alignment alternative splits from the Dumbarton alignment alternative just west of Newark. The alignment alternative intersects some single-family residential neighborhoods in Newark. Portions of this alignment alternative, east of I-880, are not located on existing transportation right-of-way.

Fremont Central Park (Low Bridge): The Fremont Central Park (Low Bridge) alignment alternative would pass through the same neighborhoods and communities as the Fremont Central Park (High Bridge) alignment alternative.

Fremont Central Park (Tube): The Fremont Central Park (Tube) alignment alternative would pass through the same neighborhoods and communities as the Fremont Central Park (High Bridge) alignment alternative.

Central Valley Corridor

The Central Valley corridor includes the areas of the Central Valley from the City of Stockton south to the northern areas of Madera County. Two alignment alternatives within the Central Valley corridor traverse along the existing UPRR and BNSF rail lines.

Existing Land Use

The Central Valley corridor includes the areas of the Central Valley generally along the existing UPRR and BNSF rail lines from the City of Stockton south to the northern areas of Madera County.

BNSF – UPRR: Between the Cities of Stockton and Modesto, the BNSF – UPRR alignment alternative passes through agricultural lands with scattered residences. Leaving Stockton in a southeasterly direction, the alignment alternative passes farmlands until it enters the City of Escalon. The BNSF – UPRR alignment alternative runs along Main Street through the center of Escalon, traversing residential and commercial areas. This alignment alternative continues southeast along the existing rail line past large agricultural parcels with scattered residences until it crosses the San Joaquin County/Stanislaus County line at the Stanislaus River. The community of Riverbank at the Stanislaus River is the only residential area before the Modesto Briggsmore Station.

The BNSF – UPRR alignment alternative would follow the existing BNSF rail corridor through predominantly agricultural lands south of Modesto. Within Stanislaus County, long stretches of farmlands are occasionally broken by the small rural communities of Empire, Hughson, and Denair. Between Empire and Hughson, the alignment alternative passes the Whitehurst-Lakewood Memorial Park Cemetery just south of the Tuolumne River.

In Atwater, the alignment alternative passes the Castle Air Museum, Bloss Hospital, and Castle Park. For a potential station location at Castle AFB, the alignment alternative would bypass the community of Winton and Atwater through farmlands east of Winton and would then pass through developed residential area between Castle AFB and Atwater. Land uses in this area include the California Army National Guard, former military buildings, and the Atwater Sports Club. South of Castle AFB, the BNSF – UPRR alignment alternative diverges from the BNSF alignment, cutting through agricultural lands to join the existing UPRR rail right-of-way northwest of the City of Merced.

Within Merced County, the BNSF – UPRR alignment alternative traverses a number of communities, including Delhi, Livingston, and Atwater. Beyond Atwater, land use density increases as it approaches the City of Merced. Agricultural land uses are predominant between the Cities of Merced and Chowchilla. Upon entering Chowchilla, land use becomes light industrial.

BNSF: The BNSF alignment alternative would be the same as the BNSF – UPRR alignment alternative except that south of Merced, the alignment alternative would continue along the existing BNSF rail corridor through agricultural land uses before entering Chowchilla, where land use becomes light industrial.

UPRR N/S: Between the Cities of Stockton and Modesto, the UPRR N/S alignment alternative passes through several developed communities. South of Stockton, the alignment alternative passes through the communities of French Camp, Lathrop, Manteca, and Ripon, before entering Stanislaus County. While much of this portion is agricultural, there are large residential tracts and smaller commercial areas along the alignment in Manteca and Ripon. South of the county line at the Stanislaus River, the UPRR N/S alignment alternative passes the community of Salida before immediately entering Modesto. The alignment alternative continues through the central portion of Modesto, passing Modesto Junior College West, Modesto Junior College East, the Modesto Convention Center, Tuolumne Regional River Park, and the community of Ceres immediately south of the Tuolumne River.

South of the Modesto (Downtown) station location option, the land uses surrounding the alignment alternative consist of a mix of residential, commercial, and industrial development. Development becomes increasingly sparse as the alignment alternative continues south through rural residential and agricultural development. The UPRR N/S alignment alternative bisects the City of Ceres, passing the Stanislaus County Fairgrounds and the downtown area including Central Park and the Chamber of Commerce.

Within Merced County, the UPRR N/S alignment alternative traverses a number of communities, including Delhi, Livingston, and Atwater. Beyond Atwater, land use density increases as it approaches the City of Merced. Agricultural land uses are predominant between the cities of Merced and Chowchilla. Upon entering Chowchilla, land use becomes light industrial.

BNSF Castle: The BNSF Castle alignment alternative would be the same as the BNSF – UPRR alignment alternative except that the alignment alternative would continue just west of Castle AFB through mostly agricultural land before continuing along the existing BNSF right-of-way through mostly agricultural land uses before entering Madera.

UPRR – BNSF Castle: The UPRR – BNSF Castle alignment alternative would be the same as the UPRR N/S alignment alternative through Turlock and the same as the BNSF Castle alignment alternative north of Winton with the exception of the connection between the UPPR and BNSF alignments just south of the Merced County line; the alignment alternative would continue through agricultural land uses.

UPRR – BNSF: The UPRR – BNSF alignment alternative would be the same as the UPRR N/S alignment alternative to the San Joaquin County border, the connection to the BNSF alignment alternative north of Winton, and the BNSF alignment alternative south of the connection.

Population Characteristics

The Central Valley corridor includes portions of San Joaquin, Stanislaus, and Merced counties. Population grew from approximately 1.0 million people in 1990 to over 1.2 million people in 2000, an increase of 19%. The region's population is expected to increase by over 1.0 million people between

2000 and 2030, an increase of over 85%. The largest growth in the region is expected to occur in San Joaquin County with an expected growth of nearly 98% over the same time period.

According to 2000 U.S. Census data, minority persons accounted for the following percentages of total population in the counties in this corridor (lowest to highest): Stanislaus, 43%; San Joaquin, 53%; and Merced, 60%. The Central Valley corridor alignment alternatives have an ethnic minority population of 52%. The BNSF and UPRR N/S alignment alternatives have minority populations of 44 and 56%, respectively.

Income

According to 2000 U.S. Census data, the percentages of households identified as below poverty level (as defined by the Department of Health and Human Services) for this corridor by county are (lowest to highest): Stanislaus, 14%; San Joaquin, 15%; and Merced, 18%.

According to the 2000 U.S. Census, low-income households within the Central Valley corridor represent nearly 17% of the population. The BNSF Castle and UPRR N/S alignment alternatives have the greatest low-income households with 22 and 20%, respectively. Low-income households account for over 13% within the BNSF alignment alternatives.

Neighborhoods and Communities

The Central Valley corridor includes the Central Valley neighborhood and community areas generally located along the UPRR and BNSF rail lines from the City of Stockton south to the northern portions of Madera County.

BNSF – UPRR: The BNSF – UPRR alignment alternative is bordered predominantly by agricultural lands with scattered residences. Leaving eastern Stockton, the alignment alternative follows existing BNSF right-of-way through the rural communities of Burnham, Avena, Escalon, Huntley, and Riverbank. The alignment alternative continues southeast and passes through the small community of Claus, Modesto, and the residential neighborhoods of Empire, Hughson, Denair, Cortez, Ballico, and Cressey. Residential neighborhoods become denser as the alignment alternative traverses the communities of Winton and The Grove. As the alignment alternative continues south, it passes through the suburban community of Castle Gardens and the urban neighborhoods of Merced and through the agricultural communities of Lingard and Athlone. The alignment alternative passes through the small rural community of Minturn and continues south through rural Fairmead before passing through eastern Chowchilla.

BNSF: The BNSF alignment alternative would affect the same neighborhoods as the same as the BNSF – UPRR alignment alternative except that south of Merced, the alignment alternative would continue along the existing BNSF rail corridor southeast of Merced through the rural communities of Plainsburg and Le Grand.

UPRR N/S: The UPRR N/S alignment alternative begins in the City of Stockton and continues on existing UPRR right-of-way through several residential neighborhoods including Mormon, The Homestead, and El Pinal. The alignment alternative then continues through the unincorporated communities of French Camp, Lathrop, and Manteca and passes through several residential neighborhoods. The alignment alternative continues through the unincorporated community of Ripon along SR 99 and adjacent residential neighborhoods. It continues along existing right-of-way through residential neighborhoods in the town of Salida, Modesto, and Ceres before continuing through Keyes, Central Turlock, Delhi, and Livingston. It continues south through western Atwater and Merced and through the agricultural communities of Lingard and Athlone. The alignment alternative passes through the small rural community of Minturn and continues south through rural Fairmead before passing through eastern Chowchilla.

BNSF Castle: The BNSF Castle alignment alternative would be the same as the BNSF – UPRR alignment except that the alignment would continue just west of Castle AFB before continuing along the existing BNSF rail right-of-way passing through Planada before continuing on to Madera.

UPRR – BNSF Castle: The UPRR – BNSF Castle alignment alternative would affect the same neighborhoods as the UPRR N/S alignment alternative through Turlock and the BNSF Castle alignment alternative north of Winton with the exception of the connection between the UPRR and BNSF corridors just south of the Merced County line where the alignment alternative would not pass through any additional neighborhoods.

UPRR – BNSF: The UPRR – BNSF alignment alternative would affect the same neighborhoods as the UPRR N/S alignment alternative in San Joaquin County, the connection to the BNSF alignment alternative north of Winton, and the BNSF alignment alternative south of the connection.

3.7.3 Environmental Consequences

A. NO PROJECT ALTERNATIVE

Land use and local communities will change between 2006 and 2030 as a result of population growth and changes of economic activity in the study areas for the six corridors studied (see Chapter 5, "Economic Growth and Related Impacts"). The No Project Alternative is based on existing conditions and the funded and programmed transportation improvements that would be developed and in operation by 2030. Although it is expected that the No Project Alternative would result in some changes related to land use compatibility, communities and neighborhoods, property, and environmental justice, it was assumed that projects included in the No Project Alternative would include typical design and construction practices to avoid or minimize potential impacts and would be subject to a project-level environmental review process to identify potentially significant impacts and to include feasible mitigation measures to avoid or substantially reduce potential impacts. Although some changes would be likely, attempting to estimate such changes would be speculative. Therefore, no additional potential impacts were quantified for the No Project Alternative.

B. HIGH-SPEED TRAIN ALIGNMENT ALTERNATIVES

Table 3.7-3 provides a summary comparison of alignment alternatives for the land use evaluations. A review of the land use impacts for each corridor follows the table.

Table 3.7.3.
Land Use Summary Data Table for
Alignment Alternatives and Station Location Option Comparisons

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
San Francisco to San Jose: Caltrain	1 of 1	San Francisco to Dumbarton	H Compatible with existing Caltrain Corridor.	N	L Corridor would be built mostly within existing Caltrain Corridor.	M Alignment within existing rail right-of-way. Percentages of EJ populations in study area exceed thresholds.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
	1 of 1	Dumbarton to San Jose	H Compatible with existing Caltrain Corridor.	N	L Corridor would be built mostly within existing Caltrain Corridor.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
Station Location Options						
Transbay Transit Center			H Compatible with transportation and high-density office use.	N	L Station would be located at the current Transbay Terminal.	L Percentages of EJ populations are lower than the thresholds.
4th and King (Caltrain)			H Compatible with existing Caltrain station and surrounding uses.	N	L Station would be located at the current Caltrain station site.	L Percentages of EJ populations are lower than the thresholds.
Millbrae/SFO			H Compatible with existing transportation uses at the Millbrae BART/Caltrain Station area.	N	L Station would be located at the Millbrae BART/ Caltrain Station site.	L Percentages of EJ populations are lower than the thresholds.
Redwood City (Caltrain)			H Compatible with existing Caltrain station and adjacent downtown commercial/service oriented uses. Consistent with plans that promote transit alternatives to the automobile.	N	L Station would be located at the current Caltrain station site.	L Percentages of EJ populations are lower than the thresholds.
Palo Alto (Caltrain)			H Compatible with Caltrain station, multifamily housing, and facilities associated with Stanford University. Consistent with multi-modal transit center.	N	L Station would be located at the current Caltrain station site.	L Percentages of EJ populations are lower than the thresholds.
Oakland to San Jose: Niles/I-880	1 of 2	West Oakland to Niles Junction	H Compatible with existing UPRR right-of-way.	N	L Corridor would be built mostly within existing UPRR right-of-way.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
		12th Street/City Center to Niles Junction	H Compatible with existing UPRR right-of-way.	N	L Corridor would be built mostly within existing UPRR right-of-way.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
	1 of 2	Niles Junction to San Jose via Trimble	H Compatible with existing UPRR/I-880 right-of-way.	N	L Corridor would be built mostly within existing UPRR right-of-way.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
		Niles Junction to San Jose via I-880	H Compatible with existing UPRR/I-880 right-of-way.	N	L Corridor would be built mostly within existing UPRR right-of-way.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
Station Location Options						
West Oakland/7th Street			H Compatible with existing West Oakland BART Station and transit-oriented district. Consistent with plans for transit oriented district.	N	L Station would be constructed below grade at the existing West Oakland BART Station.	M Station constructed below grade. Percentages of EJ populations within station area exceed thresholds.
12th Street/City Center			H Compatible with 12th Street/City Center BART Station, civic center, and high-intensity commercial uses associated with Downtown Oakland. Consistent with plans for transit oriented district.	N	L Station would be constructed below grade at the existing Oakland City Center/12th Street BART Station.	M Station constructed below grade. Percentages of EJ populations within station area exceed thresholds.
Coliseum/Airport			H Compatible with industrial uses and commercial uses associated with the McAfee Coliseum and ORACLE Arena. Consistent with plans for transit oriented district.	N	L Station would be located south of the Coliseum/Oakland Airport BART Station along UPRR right-of-way.	M Station constructed at existing Coliseum/ Oakland BART Station. Percentages of EJ populations within station area exceed thresholds.
Union City (BART)			H Compatible with Union City BART Station and industrial and	N	L Station would be located near the current Union City BART Station.	M Station constructed near existing Union City BART Station. Percentages of EJ

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
			commercial uses. Consistent with plans for development of a regional intermodal facility and research and development campus.			populations within station area exceed thresholds.
Fremont (Warm Springs)			H Compatible with existing industrial and transportation uses. Consistent with plans for future BART station.	N	L Potential impacts on undeveloped properties.	H New station constructed outside of existing right-of-way. Percentages of EJ populations within station area exceed thresholds.
San Jose to Central Valley: Pacheco Pass	1 of 1	Pacheco	M Highly compatible with existing Caltrain Corridor between San Jose and Gilroy. Low compatibility with agricultural land and open space, east of Gilroy.	N	L Alignment within existing Caltrain Corridor between San Jose and Gilroy. East of Gilroy, alignment within agricultural and open space.	M Alignment within existing rail right-of-way, north of Gilroy. New alignment east of Gilroy. Although the EJ percentage thresholds are exceeded east of Gilroy, the EJ populations are sparse and distant from the HST line.
	1 of 3	Henry Miller (UPRR Connection)	M Highly compatible with existing Henry Miller Road between Santa Nella and Elgin Avenue. New alignment right-of-way would be incompatible with agricultural uses east of Elgin Avenue.	N	L Alignment would be built through agricultural land. Impacts would be minimal.	L Alignment alternative would create new transportation right-of-way. Although the EJ percentage thresholds are exceeded, the populations are sparse and distant from the HST line.
		Henry Miller (BNSF Connection)	M Highly compatible with existing Henry Miller Road between Santa Nella and Elgin Avenue. New alignment right-of-way would be incompatible with agricultural uses east of Elgin Avenue.	N	L Alignment would be built through agricultural land. Impacts would be minimal.	L Alignment alternative would create new transportation right-of-way. Although the EJ percentage thresholds are exceeded, the populations are sparse and distant from the HST line.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
		GEA North	L Incompatible with agricultural uses.	N	L Alignment would be built through agricultural and open space. Impacts would be minimal.	H Alignment alternative would create new transportation right-of-way. Percentages of EJ populations exceed thresholds.
San Jose (Diridon)			H Compatible with San Jose Diridon Caltrain station and industrial uses. Consistent with plans for downtown redevelopment.	N	L Station would be located at the current Caltrain station site.	L Percentage of EJ populations is lower than the thresholds.
Morgan Hill (Caltrain)			H Compatible with Morgan Hill Caltrain station and commercial uses. Consistent with plans for development of multi-modal transit transfer center.	N	L Station would be located at the current Caltrain station site.	L Percentages of EJ populations are lower than the thresholds.
Gilroy (Caltrain)			M Highly compatible with existing Gilroy Caltrain station and commercial uses. Low compatibility with single-family residential use. Consistent with policies for development of a multi-modal transit center.	N	L Station would be located at the current Caltrain station site.	M Station constructed at existing Gilroy Caltrain Station. Percentages of EJ populations within station area exceed thresholds.
East Bay to Central Valley: Altamont Pass	1 of 4	I-680/ 580/UPRR	H Compatible with existing highway/ rail right-of-way.	N	H Potential for high impacts on residential properties and medium impacts on nonresidential properties.	L Percentages of EJ populations are lower than the thresholds.
		I-580/ UPRR	H Compatible with existing highway/ rail right-of-way. Incompatible with single-family uses.	N	M Potential for high impacts on residential properties and low to medium impacts on nonresidential properties.	L Percentages of EJ populations are lower than the thresholds

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
		Patterson Pass/UPRR	H Compatible with commercial, industrial, multifamily residential and open space uses and existing rail right-of-way.	N	L – M Alignment would traverse mostly through unincorporated and unused portions of Alameda County; however, there is a potential to have medium impacts on residential properties and low to medium impacts on nonresidential properties west of Livermore.	L Percentages of EJ populations are lower than the thresholds.
		UPRR	M - H Highly compatible with existing rail right-of-way, commercial and industrial uses. Low compatibility with agricultural uses.	N	M Potential for high impacts on residential properties and low to medium impacts on nonresidential properties.	L Percentages of EJ populations are lower than the thresholds.
	1 of 4	Tracy Downtown (BNSF Connection)	M Highly compatible with existing transportation right-of-way, agricultural and industrial uses. Low compatibility with residential uses.	N	M Potential impacts on residential and nonresidential uses.	L Percentages of EJ populations are lower than the thresholds.
		Tracy ACE Station (BNSF Connection)	M Highly compatible with existing rail right-of-way, agricultural and industrial uses. Low compatibility with residential uses.	N	M Potential impacts on residential and nonresidential uses.	L Percentages of EJ populations are lower than the thresholds.
		Tracy ACE Station (UPRR Connection)	M Highly compatible with existing rail right-of-way, agricultural and industrial uses. Low compatibility with residential uses.	N	M Potential impacts on residential and nonresidential uses.	L Percentages of EJ populations are lower than the thresholds.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
		Tracy Downtown (UPRR Connection)	M Highly compatible with existing transportation right-of-way, agricultural and industrial uses. Low compatibility with residential uses.	N	M Potential impacts on residential and nonresidential uses.	L Percentages of EJ populations are lower than the thresholds.
	2 of 2	East Bay Connections	H Compatible with existing UPRR right-of-way.	N	L Corridor would be built mostly within existing UPRR right-of-way.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
Station Location Options						
Pleasanton (I-680/Bernal Rd)			M Incompatible with single-family residential use. Medium compatibility with nearby schools and community parks. Moderately consistent with plans for adjacent parks, athletics fields and public utilities. Compatible with existing ACE station.	N	L Station would be located at the Pleasanton ACE station site.	L Percentages of EJ populations are lower than the thresholds.
Pleasanton (BART)			H Compatible with Dublin/Pleasanton BART station and existing transit corridor. Consistent with planned mixed-use development around BART station.	N	L Station would be located at the Dublin/Pleasanton BART Station.	L Percentages of EJ populations are lower than the thresholds.
Livermore (Downtown)			H Compatible with industrial and transportation uses. Consistent with policies for development of mixed-use downtown development.	N	L Potential for low potential impacts on undeveloped property	L Percentages of EJ populations are lower than the thresholds.
Livermore (I-580)			H Compatible with existing transportation uses. Consistent with	N	L Potential for low potential impacts on undeveloped property	L Percentages of EJ populations are lower than the thresholds.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
			plans for neighborhood commercial land uses.			
Livermore (Greenville Road/UPRR)			H Compatible with industrial uses. Consistent with proposed industrial use.	N	M Potential for medium impacts on industrial property.	L Percentages of EJ populations are lower than the thresholds.
Livermore (Greenville Road/I-580)			M Compatible with industrial uses. Incompatible with existing and proposed agricultural uses. Not consistent with proposed agricultural use.	N	L Potential for low impacts on undeveloped property.	L Percentages of EJ populations are lower than the thresholds.
Tracy (Downtown)			H Highly consistent with planned downtown mixed-use development.	N	L Potential for low impacts on undeveloped property.	L Percentages of EJ populations are lower than the thresholds.
Tracy (ACE)			M Compatible with industrial and agricultural uses. Consistent with policies to encourage improved regional rail service.	N	M Potential for medium impacts on industrial property.	L Percentages of EJ populations are lower than the thresholds.
San Francisco Bay Crossings	1 of 2	Trans Bay Crossing – Transbay Transit Center	H Highly compatible with transportation and industrial uses.	N	L Potential for low impacts on residential and nonresidential properties because alignment would be below grade.	M Alignment below grade. Percentages of EJ populations exceed thresholds.
		Trans Bay Crossing – 4th & King	H Highly compatible with transportation and industrial uses.	N	L Potential for low impacts on residential and nonresidential properties because alignment would be below grade.	M Alignment below grade. Percentages of EJ populations exceed thresholds.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
	1 of 6	Dumbarton (High Bridge)	M Highly compatible with multifamily residential, industrial and commercial, and existing rail right-of-way uses. Low compatibility with crossing of Newark Slough.	N	M Potential for low impacts on industrial, commercial properties and high impacts on residential properties.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
		Dumbarton (Low Bridge)	M Highly compatible with multifamily residential, industrial and commercial, and existing rail right-of-way uses. Low compatibility with crossing of Newark Slough.	N	M Potential for low impacts on industrial, commercial properties and high impacts to residential properties.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
		Dumbarton (Tube)	M Highly compatible with multifamily residential, industrial and commercial, and existing rail right-of-way uses. Low compatibility with crossing of Newark Slough.	N	M Potential for low impacts on industrial, commercial properties and high impacts on residential properties.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
		Fremont Central Park (High Bridge)	L Low compatibility with Don Edwards San Francisco Bay Wildlife Refuge. Medium compatibility with industrial and commercial uses.	N	H Potential for high impacts on residential properties.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
		Fremont Central Park (Low Bridge)	L Low compatibility with Don Edwards San Francisco Bay Wildlife Refuge. Medium compatibility with industrial and commercial uses.	N	H Potential for high impacts on residential properties.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
		Fremont Central Park (Tube)	L Low compatibility with Don Edwards San Francisco Bay Wildlife Refuge. Medium compatibility with industrial and commercial uses.	N	H Potential for high impacts on residential properties.	M Alignment within existing rail right-of-way. Percentages of EJ populations exceed thresholds.
Station Location Options						
Union City (Shinn)			M Highly compatible with industrial uses. Low compatibility with single-family residential uses.	N	M Potential impacts on industrial properties.	H New station constructed outside of existing right-of-way. Percentages of EJ populations within station area exceed thresholds.
Central Valley	1 of 6	BNSF – UPRR	M High compatibility with existing rail corridor and industrial and commercial uses. Low compatibility with residential use.	N	L Alignment alternative traverses mostly rural land.	M New alignment mostly within existing right-of-way. Percentages of EJ populations exceed thresholds.
		BNSF	M High compatibility with existing rail corridor and industrial and commercial uses. Low compatibility with residential use.	N	L Alignment alternative traverses mostly rural land.	M New alignment within existing right-of-way. Percentages of EJ populations exceed thresholds.
		UPRR N/S	M High compatibility with existing rail corridor and industrial, agricultural and commercial uses. Low compatibility with residential uses.	N	L Alignment alternative traverses mostly rural land and would be built within the existing UPRR right-of-way.	M New alignment within existing right-of-way. Percentages of EJ populations exceed thresholds.
		BNSF Castle	M High compatibility with existing rail corridor and industrial, agricultural and commercial uses. Low compatibility with residential uses.	N	L - M Alignment alternative traverses mostly rural land. Potential for property impacts on nonresidential and residential properties.	M New alignment mostly within existing right-of-way. Percentages of EJ populations exceed thresholds.

Corridor	Possible Alignments	Alignment Alternative	Land Use Compatibility (H,M,L)	Community Cohesion Impacts (Y/N)	Potential For Property Impacts (H,M,L)	Environmental Justice (EJ) Impacts (H,M,L)
		UPRR – BNSF Castle	M High compatibility with existing rail corridor and industrial, agricultural and commercial uses. Low compatibility with residential uses.	N	L - M Alignment alternative traverses mostly rural land. Potential for property impacts on nonresidential and residential properties.	M New alignment mostly within existing right-of-way. Percentages of EJ populations exceed thresholds.
		UPRR – BNSF	M High compatibility with existing rail corridor and industrial, agricultural and commercial uses. Low compatibility with residential uses.	N	L - M Alignment alternative traverses mostly rural land. Potential for property impacts on nonresidential and residential properties.	M New alignment mostly within existing right-of-way. Percentages of EJ populations exceed thresholds.
Station Location Options						
Modesto (Downtown)			H Compatible with industrial and commercial uses.	N	M Medium potential for impacts on industrial properties.	L Percentages of EJ populations are lower than the thresholds.
Briggsmore (Amtrak)			L Incompatible with single-family residential and agricultural uses.	N	L Low potential for impacts on rural undeveloped properties.	L Percentages of EJ populations are lower than the thresholds.
Merced (Downtown)			M Compatible with commercial use. Incompatible with single-family .residential use.	N	M Medium potential for impacts on industrial properties.	H New station constructed outside of existing right-of-way. Percentages of EJ populations within station area exceed thresholds.
Castle AFB			M Compatible with industrial use and inactive Castle AFB. Incompatible with residential use.	N	L Low potential for impacts on rural undeveloped properties.	H New station constructed outside of existing right-of-way. Percentages of EJ populations within station area exceed thresholds.

San Francisco to San Jose

Land Use Compatibility

Alignment Alternatives

San Francisco to Dumbarton: The San Francisco to Dumbarton alignment alternative would be highly compatible with existing land use because it would be constructed primarily within the existing

Caltrain corridor. Grade separations along the alignment alternative would entail the conversion of residential and nonresidential property.

Dumbarton to San Jose: The land use compatibility for the Dumbarton to San Jose alignment alternative would be the same as the San Francisco to Dumbarton alignment alternative.

Station Location Options
Transbay Transit Center: An underground HST station location option at the proposed Transbay Transit Center in downtown San Francisco would be highly compatible with the existing transportation use at the terminal site. The Transbay Transit Center station location option would be supportive of the high-intensity land use associated with the San Francisco financial district.

Fourth and King. An underground HST station location option at Fourth and King in the City of San Francisco would be highly compatible with the existing Caltrain station and yard under which it would be located. The 4th & King station location option would support other land use in the vicinity of the Caltrain station, including Pacific Bell Park and the Mission Bay Redevelopment area.

Millbrae/SFO: The Millbrae/SFO station location option would be highly compatible with the existing Caltrain/BART station and would support future planned use for the creation of a transit-oriented district surrounding the Millbrae BART/Caltrain station area. Construction of the HST parking and drop-off facilities would convert approximately 2 ac of commercial property to transportation use.

Redwood City: An HST station location option at Redwood City would be highly compatible with the existing Caltrain station and adjacent downtown commercial/service oriented uses. The station location option would be consistent with the *Redwood City Strategic General Plan,* which promotes development of convenient transit alternatives to the use of the automobile.

Palo Alto: An HST station location option at Palo Alto would be highly compatible with existing land use in the area, including multifamily housing and other facilities associated with Stanford University. The Palo Alto station location option would be consistent with the *Palo Alto Comprehensive Plan*, which supports the continued development and improvement of the University Avenue Multi-modal Transit Station. The Plan is supportive of a quiet, fast rail system that encircles the Bay and the development of intracounty and transbay transit systems that link Palo Alto to the rest of Santa Clara County and adjoining counties. Construction of the Palo Alto station location option, parking garage, and ancillary facilities would entail conversion of approximately 10 ac of industrial property to transportation use.

Communities and Neighborhoods
The San Francisco to San Jose corridor would be primarily within an existing, active commuter and freight rail corridor and therefore would not constitute any new physical or psychological barriers that would divide, disrupt, or isolate neighborhoods, individuals, or community focal points in the corridor. Between the 4th & King station location option and the Transbay Transit Center, the alignment alternative would be constructed underground and would not have an effect on community cohesion. Construction of grade separations along the corridor between San Francisco and San Jose would have a beneficial effect on community cohesion by improving circulation between neighborhood areas.

Property
San Francisco to Dumbarton: There would be a low potential for property impacts along this alignment alternative because the rail improvements would be mostly contained within existing rail right-of way. Grade separations along the alignment alternative could entail the conversion of residential and nonresidential property.

Dumbarton to San Jose: The potential for property impacts for the Dumbarton to San Jose alignment alternative would be the same as the San Francisco to Dumbarton alignment alternative.

Environmental Justice

The San Francisco to San Jose corridor would be along an existing transportation corridor; therefore, it would not be expected to result in disproportionate impacts on the environmental justice communities identified in the study area. The five potential station location options (Transbay Transit Center, 4th and King, Millbrae/SFO, Redwood City, and Palo Alto) do not have substantial minority or low-income populations in their respective vicinities. Although there is the potential for impacts on environmental justice communities, they are not disproportionate to these communities. Therefore, the potential for impacts would be medium.

Oakland to San Jose Corridor

Land Use Compatibility

Alignment Alternatives

West Oakland to Niles Junction: Land use compatibility levels for the West Oakland to Niles Junction alignment alternative would be high because it would be constructed primarily within the existing UPRR/I-880 corridor. Grade separations along the alignment might entail the conversion of residential and nonresidential property.

12th Street/City Center to Niles Junction: The land use compatibility levels for the 12th Street/City Center to Niles Junction alignment alternative would be the same as the West Oakland to Niles Junction alignment alternative.

Niles Junction to San Jose via Trimble: The land use compatibility levels for the Niles Junction to San Jose via Trimble alignment alternative would be the same as the West Oakland to Niles Junction alignment alternative including the portion of the alignment alternative that travels via tunnel at Trimble Road.

Niles Junction to San Jose via I-880: The land use compatibility levels for the Niles Junction to San Jose via I-880 alignment alternative would be the same as the West Oakland to Niles Junction alignment alternative because it would travel along the I-880 corridor through San Jose.

Station Location Options

West Oakland/7th Street: An underground HST station location option at West Oakland would be highly compatible with the existing West Oakland BART station at this location. Existing residential uses in the vicinity are primarily single family; however, the *Oakland General Plan* designates the West Oakland station area as a transit-oriented district and proposes increased intensity of use over the planning period. Approximately 2 ac of land would be acquired for construction of the West Oakland station location option parking area. The property that would be acquired is currently in transportation/utility use; therefore, no land use conflict would occur.

12th Street/City Center: An underground HST station location option at 12th Street in the City of Oakland would be highly compatible with the existing civic center and high-intensity commercial and service uses associated with downtown Oakland. The proposed station location option would be consistent with the existing 12th Street/City Center BART station and would support policies in the *Oakland General Plan* that designate the 12th Street/City Center station area as a transit-oriented district.

Oakland Airport: The Oakland Airport station location option would be highly compatible with the nearby industrial complexes and the commercial and service uses associated with the McAfee Coliseum and ORACLE Arena. The proposed station location option would be consistent with the

Oakland General Plan, which designates the station location option area as a transit-oriented district and as an intermodal transfer point.

Union City (BART): The Union City (BART) station location option would be highly compatible with the transportation facilities and industrial uses in the surrounding area. An HST station location option at the existing Union City BART station would be consistent with the *Union City General Plan* to implement policies for development of a regional intermodal facility at this location. The station location option would also be supportive of future planned land use to develop a research and development campus in the area.

Fremont (Warm Springs): The Fremont (Warm Springs) station location option would be highly compatible with the transportation facilities and industrial uses surrounding the station location option. It would also be consistent with plans for a future BART station at this location.

Communities and Neighborhoods

The Niles/I-880 alignment alternative would have no effect on community cohesion because it would be constructed primarily within the existing UPRR/I-880 right-of-way or beneath grade. Although the alignment alternative may require the relocation of residential property for the construction of grade separations, it would not create a new physical barrier within existing neighborhoods.

Property

West Oakland to Niles Junction: The West Oakland to Niles Junction alignment alternative would be mostly contained within existing UPRR/I-880 right-of-way; therefore, it would have a low potential for property impacts. Grade separations along the alignment alternative could entail the conversion of residential and nonresidential property.

12th Street/City Center to Niles Junction: The potential for property impacts for the 12th Street/City Center alignment alternative would be the same as the West Oakland to Niles Junction alignment alternative.

Niles Junction to San Jose via Trimble: The potential for property impacts for the Niles Junction to San Jose via Trimble alignment alternative would be the same as the West Oakland to Niles Junction alignment alternative.

Niles Junction to San Jose via I-880: The potential for property impacts for the Niles Junction to San Jose via I-880 alignment alternative would be the same as the West Oakland to Niles Junction alignment alternative.

Environmental Justice

Substantial percentages of minority populations are located in the study area for the Oakland to San Jose corridor. Because the alignment alternatives would be mostly contained within existing rail right-of-way, they would not be expected to result in disproportionate impacts on environmental justice communities.

The six potential station location options along this corridor also have substantial environmental justice populations nearby. Because the West Oakland/7th Street and Oakland/12th Street stations would be built below grade and the Oakland Airport and Union City (BART) stations would be built at existing BART stations, construction of these is not expected to have disproportionate impacts on environmental justice communities. The Shinn and Warm Springs stations would be constructed outside the existing rail right-of-way, but because these stations would be constructed on industrial properties, they are not expected to have disproportionate impacts on environmental justice communities.

San Jose to Central Valley Corridor

Land Use Compatibility

Alignment Alternatives

Pacheco: The Pacheco alignment alternative would be highly compatible with the existing Caltrain corridor between San Jose and Gilroy. However, as the alignment alternative veers from the existing right-of-way east of Gilroy, it would potentially be incompatible as it proceeds through agricultural land and parkland. Overall, this alignment alternative would have a medium compatibility with surrounding land uses.

Henry Miller (UPRR Connection): The Henry Miller (UPRR Connection) alignment alternative is compatible with existing land uses as it traverses at-grade along Henry Miller Road between Santa Nella and Elgin Avenue. The alignment alternative becomes highly incompatible with agricultural land uses east of Elgin Avenue and the GEA. Overall, the alignment alternative would have a medium land use compatibility rating.

Henry Miller (BNSF Connection): Land use compatibility for the Henry Miller (BNSF Connection) alignment alternative would be the same as the Henry Miller (UPRR Connection) alignment alternative.

GEA North: The GEA North alignment alternative would be highly incompatible with existing agricultural uses. West of the City of Atwater, alignment alternative segments that would connect with the Central Valley alignment alternative would be highly incompatible with agricultural uses. Overall, this alignment alternative would have a low compatibility with existing land uses.

Station Location Options

San Jose (Diridon): The proposed San Jose (Diridon) station location option would be highly compatible with the existing San Jose Diridon Caltrain station and the surrounding industrial and high-density residential uses. The station location option would be consistent with the *San Jose Downtown Strategy Plan* that promotes redevelopment of the downtown toward the west and closer to the station location option.

Morgan Hill: The Morgan Hill station location option would be highly compatible with the existing Caltrain station and nearby commercial/service oriented and other urban uses. The station location option would be consistent with the *City of Morgan Hill General Plan* policies that support the expansion of alternative transportation systems, as well as the development of a multi-modal transit transfer center.

Gilroy: The Gilroy station location option would be highly compatible with the existing Caltrain station and adjoining commercial uses; however, it would be incompatible with the adjacent single-family residential uses. The proposed station would be consistent with the policies and actions stated in the *Gilroy General Plan* that place a high priority on strengthening and restoring the downtown area, including the development of an active multi-modal transit center. Although the proposed station location option would be incompatible with the existing low-density residential uses, the general plan promotes the future development of higher-density residential and mixed uses in close proximity to the Caltrain station and the multi-modal transit center.

Communities and Neighborhoods

Pacheco: This alignment alternative traverses the dense urban city of San Jose but also travels through small rural cities such as Coyote, Morgan Hill, Gilroy, and San Felipe, which consist of small single-family residential neighborhoods and farmsteads. In northern San Felipe, the alignment alternative has a low potential to impact farmstead; however, there would be no loss of community or neighborhood cohesion as a result. In other locations where this alignment alternative would create a new transportation corridor (east of Gilroy), the alignment alternative would primarily pass

through agricultural or open space lands and would not result in community cohesion impacts on neighborhoods.

Henry Miller (UPRR Connection): The Henry Miller (UPRR Connection) alignment alternative primarily passes through agricultural lands and would not result in community cohesion impacts on neighborhoods.

Henry Miller (BNSF Connection): The Henry Miller (BNSF Connection) alignment alternative primarily passes through agricultural lands and would not result in community cohesion impacts on neighborhoods.

GEA North: The GEA North alignment alternative traverses primarily through agricultural lands and would not result in community cohesion impacts on neighborhoods.

Property

Pacheco: Between the proposed Diridon and Gilroy station location options, grade separations along the alignment alternative could entail the conversion of residential and nonresidential property. The proposed San Jose to Central Valley Corridor would require new right-of-way east of the City of Gilroy. Overall, potential for property impacts is low.

Henry Miller (UPRR Connection): Because the Henry Miller (UPRR Connection) alignment alternative would traverse areas with agricultural or open space land uses, it would be expected to result in a low potential for property impacts on homes or buildings.

Henry Miller (BNSF Connection): The potential for property impacts with the Henry Miller (BNSF Connection) alignment alternative would be the same as the Henry Miller (UPRR Connection) alignment alternative.

GEA North: The GEA North alignment alternative would traverse areas with agricultural or open space land uses and would be expected to result in a low potential for property impacts on homes or buildings.

Environmental Justice

The study area for the San Jose to Central Valley corridor includes a variety of neighborhoods and a diverse multiethnic population. All four alignment alternatives have environmental justice populations that exceed the thresholds. Where the alignment alternatives use existing rail rights-of-way (i.e., along the Caltrain Corridor), they would not be expected to result in disproportionate impacts on environmental justice communities. The environmental justice population(s) percentages exceed the thresholds east of Gilroy in the open space and more rural areas, but these populations are sparse and distant from the alignment alternatives.

East Bay to Central Valley Corridor

Land Use Compatibility

Alignment Alternatives

I-680/580/UPRR: The I-680/580/UPRR alignment alternative would be highly compatible with existing land uses because it would primarily pass through existing freeway and rail right-of-way. At the base of the Diablo Mountain Range, the alignment alternative would have a low compatible rating as it crosses through the Castlewood Country Club before continuing north within existing I-680 right-of-way.

I-580/UPRR: The I-580/UPRR alignment alternative would be highly compatible with existing land uses as it proceeds by cut or tunnel through the Altamont Pass and its parkland and open space land uses. The alignment alternative is also compatible as it proceeds through agricultural land uses on

existing rail right-of-way. However, for a short distance, the alignment alternative becomes incompatible as it traverses, at-grade, existing single-family residential land uses.

Patterson Pass/UPRR: The Patterson Pass/UPRR alignment alternative would be highly compatible with existing land uses as it proceeds by cut or tunnel through the Diablo Mountain Range, which contains parkland and open space land uses. Beyond the mountain range, the Patterson Pass/UPRR alignment alternative either follows existing rail right-of-way or proceeds by cut or tunnel through agricultural and open space land uses, which makes it highly compatible with existing land uses.

UPRR: The UPRR alignment alternative would be highly compatible with existing land uses as it proceeds by cut or tunnel through the Diablo Mountain Range, which contains parkland and open space land uses. When the alignment alternative is not proceeding by tunnel, it passes through on an existing rail corridor through single-family residential, agricultural, and rural residential land uses.

Tracy Downtown (BNSF Connection): The Tracy Downtown (BNSF Connection) alignment alternative would be highly compatible with existing land uses as it traverses along existing rail right-of-way through Tracy and SR 120 through Manteca. The alignment alternative would also be highly compatible with industrial and agricultural uses in the eastern portions of Tracy and Manteca as it traverses along existing transportation right-of-way. Residential land uses through the central portion of Tracy and southwestern Manteca would have a low compatibility rating. Agricultural land uses in the vicinity of the Tracy Downtown (BNSF Connection) alignment alternative would have a low compatibility with the alignment alternative where it would create a new transportation corridor east of Escalon.

Tracy ACE Station (BNSF Connection): The Tracy ACE Station (BNSF Connection) alignment alternative would be highly compatible with existing freight and passenger rail right-of-way, industrial uses southeast of Tracy and south of Lathrop, and agricultural uses in unincorporated areas of San Joaquin County. However, in the southern portion of Tracy, residential neighborhoods have a low compatibility rating with the proposed alignment alternative. Agricultural land uses along the Tracy ACE Station (BNSF Connection) alignment alternative would have low compatibility with the alignment alternative where it would create a new transportation corridor east of Escalon. Overall, the alignment alternative would have a medium land use compatibility.

Tracy ACE Station (UPRR Connection): The Tracy ACE Station (UPRR Connection) alignment alternative would be the same as the Tracy ACE Station (BNSF Connection) alignment alternative except that at the UPRR connector, adjacent industrial land uses would be highly compatible.

Tracy Downtown (UPRR Connection): The Tracy Downtown (UPRR Connection) alignment alternative would be the same as the Tracy Downtown (BNSF Connection) alignment alternative except that at the UPRR connector, adjacent industrial land uses would be highly compatible.

Station Location Options

Pleasanton (I-680/Bernal): The Pleasanton (I-680/Bernal) station location option would have a medium compatibility with surrounding land uses, including single-family residential uses, Pleasanton Middle School, and the Fairways Golf Course. This proposed station location option is at the existing Pleasanton ACE station and is highly compatible with planned office land uses as set forth by the *Downtown Specific Plan* by the City of Pleasanton. Policies for the *Draft Bernal Property Phase II Specific Plan,* which call for the construction of community and neighborhood parks, athletics fields, and public utilities on land west and adjacent to the proposed site, would be moderately consistent.

Dublin/Pleasanton: The Dublin/Pleasanton station location option would be highly compatible with the existing BART station and transit corridor. This station location option would be consistent with

policies in the *Pleasanton General Plan,* which call for the planned mixture of land uses around the Dublin/Pleasanton BART Station.

Livermore (Downtown): The Livermore (Downtown) station location option would be constructed on and would be highly compatible with the industrial property along an existing commuter/freight corridor. This proposed station location option would be consistent with the *Livermore General Plan* (2003) policies for the development of mixed-use downtown development along the existing commuter/freight rail corridor.

Livermore (I-580): The Livermore (I-580) station location option would be located adjacent to I-580 and would be highly compatible with the existing transportation corridor. The proposed station location option would be consistent with the *Livermore General Plan* (2003) policies for neighborhood commercial land uses at this location.

Livermore (Greenville Road/UPRR): The proposed Livermore (Greenville Road/UPRR) station location option would be highly compatible with the industrial uses at this location. It would also be consistent with the *Livermore General Plan* (2003) proposed industrial use at this location.

Livermore (Greenville Road/I-580): This proposed HST station location option would be located near the median of I-580, just east of the Greenville Road interchange. The proposed station location option facilities would be highly compatible with the existing industrial uses located west of the site. The proposed station location option would not be consistent with existing and proposed agricultural uses. Overall, the alignment alternative would have a medium land use compatibility.

Tracy (Downtown): The proposed Tracy (Downtown) station location option would have a high compatibility rating because it would be located in downtown Tracy and would be consistent with planned downtown mixed-use development, as stated in the *Draft City of Tracy General Plan.* However, there are existing single-family residential uses near the site.

Tracy (ACE): The proposed Tracy (ACE) station location option would have a medium compatibility with surrounding agricultural lands and existing and proposed industrial land uses in the vicinity of the site. The proposed station would be consistent with specific policies in the *Draft City of Tracy General Plan* to encourage improved regional rail service.

Communities and Neighborhoods

Most of the alignment alternatives in this corridor would pass through communities and neighborhoods within an existing active highway or commuter/freight rail right-of-way. In locations where the alignment alternatives would create a new transportation corridor, the alignment alternative would primarily pass via cut or tunnel through the Diablo Mountain Range and would not result in community cohesion impacts in neighborhoods.

Property

Within the East Bay to Central Valley corridor, areas of potentially high property impacts would occur in the vicinity of urbanized areas in the cities of Pleasanton, Livermore, Tracy, and Manteca, where the alignment alternatives would be adjacent to existing industrial, commercial, and residential properties.

I-680/580/UPRR: There would be a potential for high property impacts on industrial properties along this alignment alternative in Pleasanton and Livermore. The potentially affected properties would be adjacent to the existing highway corridor.

I-580/UPRR: The potential for property impacts along this alignment alternative would be low to medium because it would either create a new transportation corridor through rural undeveloped land

in unincorporated areas of Alameda. There is a potential for property impacts on industrial properties adjacent to the existing highway corridor.

Patterson Pass/UPRR: Overall, the potential for property impacts for this alignment alternative would be low to medium. The potential for medium property impacts would occur in industrial areas of Pleasanton and Livermore. A new HST line through rural, undeveloped areas in unincorporated parts of Alameda County would have low to medium potential for property impacts. The potential for property impacts along the proposed Patterson Pass/UPRR alignment alternative is low because it would traverse through an unincorporated portion of Alameda County, east of Livermore. Grade separations along the alignment alternative could entail the conversion of residential and nonresidential property.

UPRR: Overall, the potential for property impacts for this alignment alternative would be medium. Along the UPRR alignment alternative, the potential for property impacts would be high in the residential areas of Pleasanton and Livermore that are adjacent to the existing rail corridor. The potential for medium property impacts would occur in industrial areas of Pleasanton and Livermore. A new HST line through rural, undeveloped areas in unincorporated parts of Alameda County would have low to medium potential for property impacts. Grade separations along the alignment alternative could entail the conversion of residential and nonresidential property.

Tracy Downtown (BNSF Connection): The Tracy Downtown (BNSF Connection) alignment alternative would be mostly contained within existing freight right-of-way. However, grade separations along the alignment alternative could entail the conversion of residential and nonresidential property, which would have a medium potential for property impacts. The BNSF connector would traverse areas with mostly agricultural or open space land uses, they would be expected to result in a low potential for property impacts on homes or buildings.

Tracy ACE Station (BNSF Connection): Overall, the Tracy ACE Station alignment alternative would be mostly contained within existing rail right-of-way. Grade separations along the alignment alternative might entail the conversion of residential and nonresidential property; therefore, the potential for property impacts would be medium. Because the alignment alternative would traverse areas with mostly agricultural or open space land uses, it would be expected to result in a low potential for property impacts on homes or buildings.

Tracy ACE Station (UPRR Connection): The Tracy ACE Station (UPRR Connection) alignment alternative would be the same as the Tracy ACE Station (BNSF Connection) alignment alternative except that at the UPRR connector would be a medium potential for impacts on industrial properties west of Manteca.

Tracy Downtown (UPRR Connection): The Tracy Downtown (UPRR Connection) alignment alternative would be the same as the Tracy Downtown (BNSF Connector) alignment alternative except that at the UPRR connector there would be a medium potential for impacts on industrial properties west of Manteca.

Environmental Justice

The environmental justice populations in the study areas for the East Bay to Central Valley corridor and proposed stations do not exceed the percentage thresholds.

San Francisco Bay Crossings

Land Use Compatibility

Alignment Alternatives

Trans Bay Crossing – Transbay Transit Center: The Trans Bay Crossing – Transbay Transit Center alignment alternative between San Francisco and Alameda counties would be highly compatible with existing transportation and industrial uses located in the cities of San Francisco and Oakland.

Trans Bay Crossing – 4th & King: Land use compatibility for the Trans Bay Crossing – 4th & King alignment alternative would be the same as the Trans Bay Crossing – 4th & King alignment alternative.

Dumbarton (High Bridge): The Dumbarton alignment alternative would generally be highly compatible with existing transportation corridors, multifamily residential, and commercial land uses. Industrial uses on both sides of the Dumbarton Bridge would also be highly compatible with the alignment alternative. However, the alignment alternative would result in a low compatibility where it crosses the Newark Slough. Overall, this alignment alternative would have a medium compatibility.

Dumbarton (Low Bridge): *Land* use compatibility for the Dumbarton (Low Bridge) alignment alternative would be the same as the Dumbarton (High Bridge) alignment alternative.

Dumbarton (Tube): Land use compatibility for the Dumbarton (Tube) alignment alternative would be the same as the Dumbarton (High Bridge) alignment alternative.

Fremont Central Park (High Bridge): The Fremont Central Park (High Bridge) alignment alternative would potentially have a low to medium compatibility with existing single-family residential and community park land uses in the City of Fremont. The proposed alignment alternative would pass through the Don Edwards San Francisco Bay National Wildlife Refuge on existing rail, resulting in a low compatibility with the existing land uses of the refuge. Nearby industrial and commercial uses, east of I-880, would have the potential for high compatibility.

Fremont Central Park (Low Bridge): Land use compatibility for the Fremont Central Park (Low Bridge) alignment alternative would be the same as the Fremont Central Park (High Bridge) alignment alternative.

Fremont Central Park (Tube): Land use compatibility for the Fremont Central Park (Tube) alignment alternative would be the same as the Fremont Central Park (High Bridge) alignment alternative.

Station Location Options

Union City (Shinn): The Union City (Shinn) station location option would be compatible with the industrial uses located in the surrounding area. The proposed station location option would have low compatibility with the single-family residential use to the south of the proposed alignment alternative.

Communities and Neighborhoods

The Trans Bay Crossing alignment alternatives would proceed via tunnel under the San Francisco Bay between the cities of San Francisco and Oakland and would not result in any community cohesion impacts. The Dumbarton alignment alternatives would follow an existing rail alignment and would not result in community cohesion impacts on neighborhoods. The Fremont Central Park alignment alternatives would follow an existing rail alignment west of I-880 in Newark. East of I-880, the alignment alternatives would create a new transportation corridor between two neighborhoods in the City of Fremont. There would be no community cohesion impacts as a result of these alignment alternatives because they would follow an exiting major utility corridor.

Property

Trans Bay Crossing – Transbay Transit Center: The Trans Bay Crossing – Transbay Transit Center alignment alternative would have areas of potentially low property impacts because the new transportation corridor would be constructed in an urban setting below grade.

Trans Bay Crossing – 4th & King: The Trans Bay Crossing – 4th & King alignment alternative would have the same potential for property impacts as the Trans Bay Crossing – Transbay Transit Center alignment alternative.

Dumbarton (High Bridge): The Dumbarton alignment alternative would have the potential for medium property impacts because it would generally follow an existing corridor through suburban industrial, commercial, and residential areas. Grade separations could entail the conversion of residential and nonresidential property.

Dumbarton (Low Bridge): The Dumbarton (Low Bridge) alignment alternative would have the same potential for property impacts as the Dumbarton (High Bridge) alignment alternative.

Dumbarton (Tube): The Dumbarton (Tube) alignment alternative would have the same potential for property impacts as the Dumbarton (High Bridge) alignment alternative.

Fremont Central Park (High Bridge)*:* Areas of potentially high property impacts would occur along the Fremont Central Park (High Bridge) alignment alternative because the proposed alignment alternative would traverse through a new transportation corridor between two neighborhoods in Fremont, east of Blacow Park. Grade separations could entail the conversion of residential and nonresidential property.

Fremont Central Park (Low Bridge): The Fremont Central Park (Low Bridge) alignment alternative would have the same potential for property impacts as the Fremont Central Park (High Bridge) alignment alternative.

Fremont Central Park (Tube): The Fremont Central Park (Tube) alignment alternative would have the same potential for property impacts as the Fremont Central Park (High Bridge) alignment alternative.

Environmental Justice

Ethnic minority populations have been identified within the study areas for all of the proposed San Francisco Bay Crossings. The potential impacts, if any, for these communities would depend in part on the extent of the new right-of-way that would be required for the HST Alignment Alternatives. Because the alignment would be mostly contained within existing rail right-of-way, it would not be expected to result in disproportionate impacts on environmental justice communities.

Central Valley Alignment

Land Use Compatibility

Alignment Alternatives

BNSF – UPRR: North of Merced, the BNSF – UPRR alignment alternative contains some residential development and, given the relatively low potential to impact residents, the compatibility rating would be high. However, because of the high percentage of agricultural production, this alignment alternative would have a medium compatibility. In Merced County, along the existing UPRR corridor, land uses are mostly agricultural with some residential. This land use pattern is considered to have a medium compatibility with this alternative.

BNSF: The BNSF alignment alternative would be the same as the BNSF – UPRR alignment alternative except that south of Merced, the alignment alternative would continue along the existing BNSF

corridor traveling through mostly agricultural land with some industrial and commercial uses. Overall, this alignment alternative would have a medium compatibility with existing land uses.

UPRR N/S: The UPRR alignment alternative contains some residential development between the cities of Stockton and Modesto. The predominant land use adjoining the route consists of orchards, groves, vineyards, and nurseries. Between the cities of Modesto and Chowchilla, along the existing UPRR corridor, land uses are mostly agricultural with some residential. This land use pattern is considered to have a medium compatibility with the alignment alternative.

BNSF Castle: The BNSF Castle alignment alternative would be the same as the BNSF – UPRR alignment alternative except that the alignment alternative would continue just west of Castle AFB before continuing along the existing BNSF rail right-of-way, traveling through mostly agricultural land with some industrial and commercial uses. Overall, this alignment alternative would have a medium compatibility with existing land uses.

UPRR – BNSF Castle: The UPRR – BNSF Castle alignment alternative would be the same as the UPRR N/S alignment alternative through Turlock and the BNSF Castle alignment alternative north of Winton with the exception of the connection between the UPRR and BNSF corridors just south of the Merced County line, where the alignment alternative would pass through agricultural land uses. Overall, this alignment alternative would have a medium compatibility with existing land uses.

UPRR – BNSF: The UPRR – BNSF alignment alternative would be the same as the UPRR N/S alignment alternative in San Joaquin County, the connection to the BNSF north of Winton, and the BNSF alignment alternative south of the connection.

Station Location Options

Modesto (Downtown): The Modesto (Downtown) station location option area has a small amount of residential land uses. Predominant land uses in the area are commercial and industrial, which would result in a high level of compatibility with the HST station location option.

Briggsmore (Amtrak): The Briggsmore station location option in the City of Modesto has nearly double the residential use as the Modesto (Downtown) station location option. The residential development in this area is lower density rural, mobile homes, and single-family subdivisions. The HST station location option is therefore considered to have a low compatibility with existing land uses.

Merced (Downtown): The Merced (Downtown) station location option is characterized by a moderate amount of residential development and supportive community commercial and governmental functions. Because of the extent of residential uses and the community-serving nature of the commercial activities (as opposed to more regional-serving uses), this station location option is assigned a medium compatibility rating.

Castle AFB : The Castle AFB station location option along the existing UPRR right-of-way is surrounded by agricultural uses and rural residential uses. The station location option along the existing BNSF right-of-way is surrounded by the inactive Castle AFB to the north and agricultural lands to the south. Both station location options are rated as having medium compatibility with these types of land uses.

Communities and Neighborhoods

For much of the Central Valley corridor, the alignment alternatives follow existing rail lines, either the UPRR or BNSF. In many cases, smaller rural communities are developed along the existing UPRR railroad tracks. There would be no neighborhood cohesion impact on these communities as a result of the alignments. In larger communities such as Stockton, French Camp, Ripon, Modesto, Ceres,

Atwater, Merced, and Chowchilla, the existing UPRR rail line divides the community. The existing BNSF corridor also divides large communities such as Escalon, Riverbank, and Empire. A parallel, at-grade set of tracks would therefore not generally be expected to result in an additional physical separation which exists between land uses on either side of the corridor.

Property

BNSF – UPRR: For this alignment alternative, areas of potentially high property impacts would occur in urbanized areas where the alignment alternative would be located adjacent to an existing transportation corridor. Areas of potentially high and medium impacts are located between Stockton and Merced along both the existing UPRR and BNSF alignments. Grade separations along the alignment alternative might entail the conversion of residential and nonresidential property. Because the alignment alternative would be mostly contained within existing UPRR and BNSF right-of-way and would traverse through mostly agricultural land and open space, there would be a low potential for property impacts.

BNSF: The potential for property impacts with the BNSF alignment would be the same as the BNSF – UPRR alignment alternative except that the alignment alternative would follow the existing BNSF right-of-way and not the UPRR right-of-way.

UPRR N/S: The potential for property impacts with the UPRR N/S alignment alternative would be the same as the BNSF – UPRR alignment alternative except that the alignment alternative would follow the existing UPRR right-of-way and not the BNSF right-of-way.

BNSF Castle: For this corridor, the potential for property impacts with the BNSF Castle alignment alternative would range from low to medium. The alignment alternative that would be within existing BNSF right-of-way would have the potential for low property impacts. A portion of the alignment alternative, east of Winton, would travel near Castle AFB and a residential neighborhood; the potential for property impacts for this area would be medium.

UPRR – BNSF Castle: The potential for property impacts with the UPRR – BNSF Castle alignment alternative would be the same as the BNSF Castle alignment alternative except that the alignment alternative would follow the existing UPRR right-of-way within San Joaquin County.

UPRR – BNSF: The potential for property impacts with the UPRR – BNSF alignment alternative would be the same as the BNSF Castle alignment alternative except that the potential for property impacts would be medium in areas north of Merced.

Environmental Justice

Within the corridor study area, environmental justice populations have been identified along the UPRR N/S alignment alternative and in the Merced (Downtown) and Castle AFB station areas. Since both alignment alternatives would be along existing rail corridors, they are not expected to result in disproportionate impacts on environmental justice communities. Although there is the potential for impacts on environmental justice communities, they are not disproportionate to these communities. Therefore, the potential for impacts would be medium.

3.7.4 Role of Design Practices in Avoiding and Minimizing Effects

The Authority is committed to utilizing existing transportation corridors and rail lines for the proposed HST system to minimize the need for additional rights-of-way and the associated potential property impacts. Most HST Alignment Alternatives are either within or adjacent to a major existing transportation corridor (existing railroad or highway right-of-way). To a large extent, these existing transportation corridors already present barriers and impose other impacts on existing communities. Although the HST system would often introduce an additional (fenced) barrier, the HST system would maintain and in many cases improve existing access conditions through the grade separation of existing services. Moreover,

portions of the alignment alternatives would be on aerial structures or in tunnels, allowing for vehicular or pedestrian access across the alignment alternatives.

The Authority has also adopted strategies for HST station location options that would incorporate transit-oriented design and smart growth land use policies as described in Chapter 6.

3.7.5 Mitigation Strategies and CEQA Significance Conclusions

Based on the analysis above, and considering the design practices in Section 3.7.4, the HST Alignment Alternatives would have a potentially significant impact related to land use compatibility at the various locations identified. The station location options and the alignment alternatives for the San Francisco to San Jose and the Oakland to San Jose corridors have a high land use compatibility overall because they are mostly within existing transportation right-of-way. The East Bay to Central Valley corridor (including stations) would have a medium to high compatibility with existing land use. Medium land use compatibility for the stations and rail alignment occurs along the East Bay to Central Valley and San Francisco Bay Crossings corridors as they travel through a mixture of areas of low (e.g. agricultural and residential) and high (e.g. existing transportation) compatibility. The San Jose to Central Valley corridor would have the most potentially significant impact on land use because it would mostly create a new transportation corridor through agricultural and open space land uses. The station location options for the San Jose to Central Valley corridor, however, would be highly compatible with existing transportation land uses.

While every effort has been made to incorporate alignment alternatives and station location options that are compatible with existing local land use plans and ordinances to the extent feasible, in many cases local plans and ordinances do not address transportation options such as the HST system. In addition, many local land use plans and ordinances have not been updated for several years, though they may be updated over time to acknowledge and support implementation of a HST system. The potential for land use incompatibility is considered significant at this programmatic level due to the uncertainties involved; however, such impacts may not be realized over the 20- to 25-year time horizon for implementing the HST system.

Mitigation strategies, as well as the design practices in Section 3.7.4, can be refined and applied at the project level to reduce this impact, as discussed below. These mitigation measures would be incorporated as feasible.

A. LAND USE COMPATIBILITY

Local land use plans and ordinances would be further considered in the selection of alignment alternatives and station location options. Project-level review would consider consistency with existing and planned land use, neighborhood access needs, and multi-modal connectivity opportunities.

Potential mitigation strategies to alleviate or minimize land use related impacts associated with the HST Alignment Alternatives might include, but are not limited to, the following:

- Continue to apply design practices to minimize property needed for the HST system and to stay within or adjacent to existing transportation corridors to the extent feasible.
- Work with local governments to consider local plans and local access needs and to apply design practices to limit disruption to communities.
- Work with local governments to establish requirements for station location option area plans and opportunities for transit-oriented development.
- Work with local governments to enhance multi-modal connections for HST station location options.

- Coordinate with cities and counties to ensure that HST facilities will be consistent with land use planning processes and zoning ordinances.
- Provide opportunities for community involvement early in project-level studies.
- Hold design workshops in affected neighborhoods to develop understanding of vehicle, bicycle, and pedestrian linkages in order to preserve those linkages through use of grade-separated crossings and other measures.
- Ensure that connectivity is maintained across the rail corridor (pedestrian/bicycle and vehicular crossings) where necessary to maintain neighborhood integrity.
- Develop facility, landscape, and public art design standards for HST corridors that reflect the character of adjacent affected neighborhoods.
- Maintain a high level of visual quality of HST facilities in neighborhood areas by implementing such measures as visual buffers, trees and other landscaping, architectural design, and public artwork.
- Establish requirements for station area plans and opportunities for transit-oriented development (see Chapter 6).

B. COMMUNITIES AND NEIGHBORHOODS

Alignment alternatives would be further refined in consultation with local governments and planning agencies, with consideration given to minimizing barrier effects in order to maintain neighborhood integrity. Potential mitigation strategies to reduce the effects of any new barriers would be considered at the project-level environmental review and could include grade separating planned rail lines and streets, new pedestrian crossings, new cross-connection points, improved visual quality of project facilities, and traffic management plans to maintain access during and after construction.

In addition, mitigation measures would also be developed for temporary construction-related impacts on any nearby neighborhoods and communities. Potential mitigation strategies to alleviate or minimize community cohesion related impacts associated with the alignment alternatives might include, but are not limited to, the following:

- Provide opportunities for community involvement early in project-level studies.
- Hold design workshops within each affected neighborhood to develop an understanding of key vehicle, bicycle, and pedestrian linkages across the rail corridor so that those linkages can be preserved, including the use of grade-separated crossings.
- Develop facility, landscape, and public art design standards for project corridors that reflect the character of adjacent affected neighborhoods.
- Ensure that connectivity (pedestrian/bicycle and vehicular crossings) across the rail corridor is maintained where necessary to maintain neighborhood integrity.
- Develop a traffic management plan to reduce barrier effects during construction.
- To the extent feasible, maintain connectivity during construction.
- Maintain high level of visual quality of project facilities in neighborhood areas by implementing such measures as visual buffers, trees and other landscaping, architectural design, and public artwork.

C. PROPERTY

Potential land use displacement and property acquisition (temporary use and/or permanent and nonresidential property) are expected to be avoided to the extent feasible by considering further

alignment alternative adjustments and design changes in the future at the project level. In addition, analysis at the project level would take into account relocation assistance in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970. Design strategies would be developed for application at the project level to avoid or minimize the temporary or permanent acquisition of residential and nonresidential property.

Access modifications, including possible over or under crossings, may be needed to mitigate impacts arising from partial property acquisitions that result in division of a farm or other land use.

D. ENVIRONMENTAL JUSTICE

Overall, the HST system is not expected to result in disproportionate adverse effects to minority or low-income populations in the Bay Area to Central Valley study region. Additional consideration of environmental justice issues would occur during project-level review, which would include consideration of potential localized impacts and potential benefits to and enhancements for communities along potential HST Alignment Alternatives. Project-level review would also include consideration of detailed mitigation measures, including mitigation for temporary construction-related impacts. Project-level review would also include outreach to potentially affected communities as part of the public review process.

Potential mitigation strategies to alleviate or minimize land use related impacts associated with the HST Alignment Alternatives might include, but are not limited to, the following.

- EO 12898 requires federal agencies to ensure effective public participation and access to information. Consequently, a key component of compliance with EO 12898 is outreach to the potentially affected minority and/or low-income population to discover issues of importance that otherwise may not be apparent. Outreach to affected communities will be conducted as part of the decision-making process, and this outreach will be documented.
- In addition to examining all impacts, specific attention will be given to the permanent impact categories that are commonly of concern for this type of project and to those that previously have been identified as being of concern. These include:
  - Air quality
  - Noise and vibration
  - Public health
  - Visual/aesthetics
  - Parklands
  - Relocation

The above mitigation strategies are expected to reduce the land use compatibility impacts of the alignment alternatives to a less-than-significant level. Additional environmental assessment would allow a more precise evaluation in the second-tier, project-level environmental analyses.

3.7.6 Subsequent Analysis

Subsequent environmental evaluations and project-level review of proposed segments and facilities would address the need for the following studies.

- Land use studies for specific alignment alternatives and station location option areas potentially impacted, including evaluation of potential land use conversion, potential growth, and potential community benefits.
- Review of localized potential environmental justice issues.

- Relocation impact analysis for potentially displaced housing and businesses.
- Pedestrian and vehicular circulation studies.